REPORT OF THE INDIAN FAMINE COMMISSION.

BENGAL SECRETARIAT LIBRARY

APPENDIX.

VOL. IV.—EVIDENCE IN REPLY TO INQUIRIES OF THE COMMISSION—(*continued*).

CHAPTER II.—RELIEF DURING EARLIEST STAGES OF DISTRESS.

CHAPTER III.—FAMINE RELIEF.

CHAPTER IV.—FAMINE PREVENTION.—PREPARATION OF SCHEMES OF WORK FOR FUTURE USE.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY EYRE AND SPOTTISWOODE.

To be purchased, either directly or through any Bookseller, from any of the following Agents, viz.,
Messrs. HANSARD and SON, 13, Great Queen Street, W.C., and 32, Abingdon Street, Westminster;
Messrs. EYRE and SPOTTISWOODE, East Harding Street, Fleet Street, and Sale Office, House of Lords;
Messrs. ADAM and CHARLES BLACK, of Edinburgh;
Messrs. ALEXANDER THOM and CO., LIMITED, or Messrs. HODGES, FIGGIS, and Co., of Dublin.

[C.—3086—IV.] *Price* 5*s.* 3*d.*

IN 30

8701

BENGAL SECRETARIAT LIBRARY

CHAPTER II.

RELIEF DURING EARLIEST STAGES OF DISTRESS.

1. Indications of Approaching Drought.

How does distress consequent on drought first make itself felt among the people, and how is it first brought to the notice of the district officers? What are the indications by which the district officer would judge whether the distress is due to temporary or local scarcity, or is likely to be the forerunner of very severe general distress ending in famine? What steps should be taken to ensure that such indications are brought to his notice? To what extent does the existing district organization suffice to ensure early and trustworthy reports, and if not sufficient, what other measures are suggested as requisite? - - page 1.

2. Classes of Rural Population first Affected.

Which classes of the rural population are first affected by serious failure of crops likely to produce famine? In what way are they affected, and how is the effect manifested? Do the early applicants for relief consist of whole families or of isolated individuals? Are all sexes and ages equally represented, or do women and children preponderate among them? So far as the applicants are field labourers deprived of employment, does this arise because the employers have no money or grain to spend on wages, or because there is nothing to do in the field? - - - - - - - - page 10.

3. Classes of Urban Population first Affected.

What classes of the urban population are the first to feel the effects of famine, and in what way do those effects operate on them, and how do they manifest themselves? How may they best be watched and met in their first stage? - - - - - - - - - - - page 19.

4. Proportion of Population Supported by Private Charity.

There is a considerable number of poor and infirm persons who in ordinary years are supported by their richer relations and friends or caste fellows, and of habitual mendicants, but who become claimants of State relief when scarcity or famine arises. What is approximately the proportion of this class to the total population, and at what stage do the springs of private charity begin to dry up? - - - page 22.

5. Forecast of Condition and Requirements of District.

It is obvious that if an accurate forecast of the condition of the people during the approaching season, following any more or less serious failure of the ordinary harvest, could be made by the district officer, it would be of great utility; in what way could he make it, and on what data should his calculations be based? Suppose, for instance, that he estimates that half the average food crop has been lost; for the support of how many people does the balance that is saved suffice? How are the rest of the people to be fed? He must form an estimate of the food stocks in the country and of the power of trade to bring in more. Supposing these two elements sufficient to supply what is wanted there would be no famine of food. But there may be lack of money to purchase food; how is an estimate to be framed of the number of persons who would probably be able to purchase, and of the number who must be assisted by the State, either by employment which will bring them wages, or by food if they cannot work? These would consist mainly of the classes indicated in questions 2, 3, 4, viz., the field labourers, the urban poor, and infirm dependants or mendicants. What numbers approximately of these classes would you expect to have on your hands if the food crops in your district failed to the extent of $\frac{1}{3}$, $\frac{1}{2}$, or $\frac{3}{4}$? and if this happened in two consecutive years? - page 25.

6. Measures to be Adopted to meet Temporary Distress.

What measures should the district officer adopt for relief supposing that he believes the distress to be temporary, or is not satisfied that it is indicative of approaching famine? Should applicants be first employed as far as practicable on the ordinary works in progress, whether under provincial or local officers, or under agents of the Public Works Department or municipalities? Under what tests should applicants be admitted? Under what circumstances may it be desirable to open special works? How should such special works be arranged? Whether so as to collect the applicants in comparatively large numbers at a few localities, or to give them employment in smaller bodies at many places in the distressed region and in the vicinity of their homes? May such works be best placed under the Public Works Department or under civil supervision? State the arguments in favour of and against either course. How may the Public Works officers be best placed in communication with the district officers for these purposes? How should the Public Works officers be guided in their selection of works for relief? And on whom should the responsibility rest in the district for seeing that all needful steps are taken by all branches of the public service concerned?

page 41.

7. Poor-house Relief without Labour Test.

Under what circumstances should poor-houses be opened to give relief without a labour test? Are there any other practical ways of affording relief at this stage except through private charity? page 62.

8. Field for Private Charity at Early Stage of Distress.

Is there at this stage of the operations any field specially appropriate for the intervention of private charity? If so, what is that field, and how should the charity be organized and directed? page 67.

9. Local Committees and Non-Official Co-operation.

To what extent and in what manner may the organization of municipalities and local fund committees, so far as they exist, be utilized in this stage? In the absence of such local bodies how could the co-operation of influential non-official persons be best organized and utilized either in connexion with the regular district authorities, or otherwise? State specifically what plan would be suitable in your district? - - page 70.

10. Village Inspection.

Have cases occurred in which such measures as those referred to in paragraph 31 *of chapter III., regarding village inspection, could properly be introduced during this, the earliest stage of distress?* page 77.

11. Local Charities for Distributing Food.

What local charities exist in your district for distributing food to the people? Are they appropriated to any particular class, or are they available in times of distress for feeding people of all classes? What is their annual value, and how many people are benefitted by them? How are they managed? Could they be made more effectual for charitable purposes in times of famine? - - - - - page 80.

12. Indications of Distress having been Underrated.

It is assumed in question 6 *that the district officer believes the distress to be temporary, or is not satisfied that it is indicative of approaching famine. But it is possible that he may be mistaken in his appreciation of the facts he at first observed. What indications would lead him to conclude that he had been mistaken and that famine is imminent? What steps should he take to have any such indications brought to his notice? The most obvious points would be such as these: to obtain the best information as to the character and progress of the crops on the ground; as to the prices and the kind of grain exposed for sale in the markets; as to the fullness of stocks in the market, and the quarter whence they come; as to police returns of lawlessness and crime; mortuary returns of deaths; reports of deaths by starvation in villages, and more especially roadside deaths; emigration or movements of the people in any direction; sales of ornaments and jewels. Are there any other such indications, and in what way should he secure that such facts should be immediately brought to his notice?* - - - - - - - - page 83.

13. Indications of Distress having been Overrated.

On the other hand, the distress which the district officer has held to be serious, though temporary, may turn out to be so slight as to require no special measures of relief. What are the indications which would lead to the conclusion that this is the case, and what steps should he take when he comes to that conclusion? Are any precautions requisite to guard against an erroneous estimate of the necessity for offering relief other than those which are supplied by the application of suitable labour or other tests? - - - page 87.

CHAPTER III.

FAMINE RELIEF.

N.B.—*In answering this and all other questions in this chapter, remember to draw the distinction (where necessary) between the three periods of famine—its beginning, height, and decline—and also between P. W. D. and civil relief-works.*

It may be assumed that the State is responsible for offering the means of support to all persons not able to provide for their own maintenance during time of famine, subject to the imposition of such tests as will prevent relief being given to persons not really in want, and will protect the public finances as far as is practicable. The methods of affording direct famine relief to persons in want in time of famine hitherto adopted by Government are—

(1.) *Relief given subject to a labour test or in return for labour.*
(2.) *Gratuitous relief not subject to any labour test.*

Relief work may be divided into that which involves—

(1.) *Unskilled labour, commonly earth-work.*
(2.) *Skilled labour for artizans.*

Gratuitous relief may be divided into—

(1.) *Relief given at poor-houses.*
(2.) *Relief at home.*

SECTION 1.

2. Public Works Department and Civil Agency Works.

The first division of relief-works for unskilled labourers may be into works supervised by officers of the Public Works Department and works supervised by the civil officers; the former will generally be works of greater permanent utility, requiring more skilled supervision, and taking a longer time to complete; the latter will usually be less important, less generally useful, and simpler in character. State what are the circumstances under which either class of work is preferable. Referring to the considerations mentioned in paragraph 7 of the Resolution of the 16th May 1878, quoted in the margin, state also if you consider that there is any class of labourers to whom the one kind of work is more suitable than the other, and what are your reasons for this division? - - - - - - - - - - - - page 90.

"Officers trained in the Public Works Department should possess the knowledge and experience necessary for keeping order among crowds of relief labourers, for exacting from them adequate tasks, and for turning their work to the best advantage; but works conducted under their agency are not free from the danger of providing insufficiently for those who are feeble or unable to give a fair out-turn of labour. District officers without professional training do not ordinarily possess the above qualifications in the same degree, and are commonly occupied with other duties. On the other hand, it is peculiarly the province of district officers to make arrangements for receiving applicants and admitting them to relief, for classifying them according to their strength and capacity for labour, for organizing them into gangs, and thus encouraging members of the same village to keep together."

3. Large and Small Relief Works.

Relief-works again may be conveniently divided into small and large, that is to say, works employing (say) 300 or 500 labourers for about one month only, and works employing a larger number of labourers for a longer period. Though this division generally corresponds with the division into civil and Public Works Department works, it does not necessarily do so; a small work might be under a Public Works Department officer, and a large one under a civil officer. State under what circumstances you consider small works to be admissible, and what the advantages and disadvantages attached to them are at different periods of a famine page 106.

4. Tests for Admission to Works.

The three main tests hitherto adopted to justify the admission of persons to relief-works are—

The Distance Test.—Under which the need of relief is proved by willingness to go a certain distance to obtain it.

The Wage Test.—Under which the need of relief is proved by willingness to accept a wage which is little more than a bare subsistence.

The Labour Test.—Under which the need of relief is proved by willingness to do a fair day's work according to the strength of the labourer.

Would you propose to adopt any other tests than these? If so, describe them. Would you reject applicants for labour because their appearance, clothing, or the ornaments they wear do not indicate penury? If so, would you do this equally at the beginning, during the height, and in the decline of a famine? page 111.

5. The Distance Test.

State how this test has been applied within your experience of famine, and how you think it should be applied. What amount of distance has been considered sufficient for the test? Was it enough that the labourers should have to go some distance to and from the work? Or was it insisted on that they should live away from their homes? If A is a work near village Z, and B is another work 10 miles off, have the inhabitants of Z been refused admittance at A and directed to go to B? If so, what measures were taken to ensure that they did go to B? If the test has been relaxed, state under what circumstances. Has the test been effectual, and has it kept away persons who were not in distress? Has it been too severe and kept away people who were in distress? What modifications would you, from the experience now gained, propose in applying the test? - - - - - - - - - page 116.

6. The Wage Test.

Where relief is given in the form of money wages, the wage will be chiefly based on the quantity, kind, and price of food required to support life, with a margin for condiments and contingencies. What are the assumptions as to the quantities of food to be given to labourers of different ages, sexes, and capacities for labour, and the extra allowance for condiments, &c.? Have you any data by which to test the accuracy or error of the assumption made as to the quantity of food required? State your experience as to the physical condition of labourers who have for some time subsisted on any given relief wage, giving the amount of that wage, and the quantity of food it supplies? What have you ascertained as to the actual kind and quantity of food purchased by labourers with their wage? How is the price ascertained of the standard kind of food on which the wage is based? How would you, with your present experience, formulate the conditions of the wage test? - - - - - - - - - page 128.

7. System of Payment.

What is the best way of paying wages, daily or less frequently; at morning before work begins, during the day, or at evening when work is over; by calling out nominal rolls, or by tickets, or by a combination of these? To whom should the payment of wages be entrusted? Explain the system of supervision most approved by experience of checking payments and of preventing laxity and fraudulent practices in the disbursement of wages? Have labourers been paid in grain, or partly in grain and partly in money? Under what circumstances is this desirable, and, if necessary, how is it best arranged? Have wages ever been paid by tickets, on presentation of which at a trader's shop food would be delivered? What would you advise in this respect? - - - - - - - - - - page 155.

8. Prevention of Fraud.

What system do you recommend to prevent frauds by persons on the works, such as the receipt of wages by those who have not worked? What steps should be taken in the case of persons who have been absent at any of the roll-calls, or who have worked part of the day, but not all of it, or who, having worked during the day, are accidentally absent when wages are paid? - - - - - - page 165.

9. Wages in Sickness.

What wage should be given to those who are prevented from working by sickness (1) *when there is a hospital attached to the work,* (2) *when there is none?* - - - - - - - page 167.

10. The Labour Test.

What are the principal descriptions of work on which fixed daily tasks are applicable, and what tasks have been insisted on? How are the labourers classified according to their physique; by whom and in how many classes? What steps are taken for raising labourers from one class to another, according as their physique improves, or vice versâ? How are they ganged, and into how large gangs? How is their work measured up; by whom, and how often? How are they punished for not completing their tasks? What steps should be taken to test the report of the measuring official to secure that the labourers are justly punished or deservedly paid in full? What steps are necessary to compel persons receiving relief to work? In those sorts of work on which it is impossible to apply the task test, what test can be applied to ensure that the labourers earn their wage properly? - - - - page 168.

11. Piece-work.

Under what conditions, if any, is payment by piece-work practicable on relief-works, that is, payment for quantity of work done at a fixed rate, irrespective of the amount of daily earnings? What are the advantages and disadvantages of the system? When it is advantageous, how can it be best adopted on a large scale, and what precautions would be necessary to prevent its abuse? - - - page 176.

12. Housing, Sanitary Arrangements, and Discipline on Relief Works.

What is the best form of hut for labourers on a relief-work, and what the best method of arranging them in a camp? What is the cost of hutting per head? Should the huts be erected by specially hired labour or by the relief labourers themselves? What points require consideration in selecting a site for such a camp? What sanitary arrangements should be prescribed in it, especially as regards latrines? What establishment is necessary to look after these arrangements? What Police or other establishment is necessary to preserve discipline and to prevent robberies? How should this be organized? - - - page 185.

13. Bazaar Arrangements in connection with Relief Works.

What arrangements do you recommend for a bazaar? Should an arrangement be made with one man to supply the labourers on certain specified terms, or should any traders who wish to do so be permitted to open shops? If the supply of traders is for any cause insufficient, what steps should be taken to induce persons to open shops, or otherwise to provide for the sale of food, &c.? Where should the bazaar be located? Should the huts be erected for the traders at the cost of Government, or at their own cost? Should any supervision be exercised over what they sell (for instance, to exclude luxuries or unwholesome food), or over the prices at which they sell? and, if so, in what way? Should they be allowed to keep their shops open all the day, or only when the labourers are off work? - - - - - - - - page 189.

14. Hospital Arrangements in connection with Relief Works.

In what cases should a hospital be attached to a relief-work? What system of sanitary inspection of the labourers is desirable? How far should the sick be treated without being sent to hospital? If there is no hospital what arrangements should be made for those who fall sick? When a hospital is necessary, what should be the shape and material of the sheds, what space should be allowed to each patient, what clothing, bedding, &c., what provision should be made and what class of people entertained for cooking and nursing?

What professional supervision should be provided over the Hospital Assistant? What authority should be exercised over him by the Public Works Department officer, or the civil officer in charge of the work, if there is one? - - - - - - - - - - - - - page 192.

15. Relief Works.—Admission, Classification, and Payment of Applicants.

What system do you recommend for the admission of applicants for relief on works for securing that no hindrances are placed in the way of their coming, and no bribes taken for admission? How would you provide for classifying them and placing them on gangs? If payment is not made daily how would you arrange for their receiving advances till the first wage day comes round? And, if paid daily, what pay should be given to those who come on during the day and work for a broken period? - - page 196.

16. The Keeping of Registers on Relief-works.

What registers should be kept up of the number and classes of persons on the works, the numbers who are daily admitted, or who leave, the wages paid, the number punished by fine, the quantity and value of the work done? - - - - - - - - - - - - - page 200.

17. Organization of Relief-works.

Describe the organization of a well-managed relief-work, the number of gangsmen and of labourers in each gang, of overseers over the gangsmen, of registering clerks and paying clerks or cashiers, and how the upper supervising staff is constituted. State also in what form, and at what periods, progress and other reports are sent up to higher authorities - - - - - - - - - page 201.

18. Discharge of Labourers from Relief-works.

What arrangements would you propose for discharging labourers from relief-works when the famine is declining, or over, or when the work is closed? Has it been customary to give money to persons discharged to enable them to reach their homes and start again in their ordinary way of life? How have persons been dealt with who to the end continue in a physical state in which they are unable to support themselves? page 206.

19. Desertions from Relief-works. Moving Bodies of Men to Works over Long Distances.

Has it been found that persons after admission to relief-works wilfully desert from them, and to what extent do such desertions commonly indicate excessive severity in the application of tests, insufficiency of food, or improper treatment of other sorts? Are they often due to other causes, and if so what? How should such results be guarded against? Under what circumstances would you recommend moving bodies of men to works over considerable distances? Should this ever be done as a preventive measure to weed out those who are not in absolute want of relief or only as a step that is expedient for the sake of transferring them from less useful to more useful work, or to admit of their being more easily fed or supervised, or to prevent sickness and the like? If the distance is more than one day's march, what arrangements should be made for hutting them for the night and for paying them or feeding them on the march? Narrate the history of any case within your knowledge in which more than 500 people were moved, or attempted to be moved, more than 20 miles, and state any difficulties the movement involved, and how they might best be avoided - - - page 210.

20. Association of Civil with Public Works Department Officer on a Relief-work.

Under what circumstances should a civil officer be associated with a Public Works Department officer in the management of a relief-work? What is the proper field of duties of the civil officer? What parts of the duties should be wholly under him and what parts should be entirely beyond his sphere? If it is proper for him in any way to interfere with or control the discipline of the labourers, the management of the camp and bazaar, the tasking, the measuring, and the payment of wages, state how this can best be done without undue friction and annoyance - - - - - - - - - page 216.

21. The Regular Employment of Ordinary in conjunction with Relief Labour.

Besides the persons to whom employment is given with the special object of affording them relief, the Public Works Department usually employs on the works it carries out a large number of both skilled and unskilled labourers, who are dependent for their regular livelihood on the receipt of wages more or less all through the year. State how the continued employment of these may best be made compatible with relief labour if the works on which this class of men is employed are closed or turned into relief-works - page 221.

22. Relief-work for Artizans, Weavers, &c.

Have you had experience of any kind of relief-work other than earth-work? If so, describe it. Has any attempt been made to employ artizans, such as weavers, smiths, carpenters, &c., in pursuing their own professions, and with what success? In the case of weaving or spinning when raw material is given out, and thread or cloth received back, is it best to pay the difference of price between the raw and the worked-up material, or to pay daily wages to the workers? State your views as to the best method of distributing the raw material and exacting a proper tale of work, and make any general suggestions on this subject that occur to you - - - - - - - - - - - - - page 223.

SECTION 2.—GRATUITOUS RELIEF.

23. The Poor-house.

The commonest mode of administering gratuitous relief is through the poor-house. What is the proper situation for a poor-house so as to secure accessibility, discipline, space, water, and proximity to food supply? Is an enclosure wall or fence necessary, and of what should it be made? What total area is desirable in proportion to the whole number of inmates? What shape and material are best for the huts, and what sleeping space (in superficial area) should be provided for each inmate? How may they best be arranged with a view to ventilation, &c.? How should the latrines be placed and managed? What is the maximum number you would accommodate in one poor-house? How should the inmates be separated and classed together so as to provide for the requirements of caste, for the keeping of families together, and for the separation of the sexes in the case of persons who do not belong to families? - - - page 227.

24. Conditions of Admission to Poor-house Relief.

What should be the conditions of admission to relief in a poor-house? The usual conditions are (1) *inability to work on a relief-work;* (2) *willingness to reside within the enclosure;* (3) *willingness to accept cooked food. Under what, if any, circumstances may these be relaxed, or may the food be distributed without residence, or may uncooked food be given? What arrangements should be made for the admission of applicants, and to whom should the duty of selection be assigned?* - - - - page 236.

25. Compulsory Detention in Poor-house.

Under what circumstances does it appear desirable that entry into a poor-house should be made compulsory on persons who appear to be starving, or to be in such a state of want as to show that relief in some form is essential to the preservation of their lives? and under what circumstances would you allow them the discretion of refusing to submit to this? If compulsion is used to take them in, what steps are required to ensure their stopping there? How should such a rule be applied to vagrants, and how to persons on relief-works, or seeking relief otherwise? Does it appear necessary or expedient to obtain legislative authority for such action as may be desirable in these respects? If so, suggest what seems most suitable. Would there be any special objections to such legislation, having in view the risk of exciting fears in the population, or for other reasons? - - - - - - - - - - - page 239.

26. Rations in a Poor-house.

What ration should be given to the ordinary inmates of a poor-house, and what special diet to those who are much reduced by innutrition? Have you any experience of the effects of the ration for adults which consists of 1 lb. of raw flour with condiments? What is the proper quantity of condiments? State the results of your experience, as fully as possible, whether this ration has or has not shown itself sufficient to support life. page 243.

27. Organization of a Poor-house.

Give as fully as possible your views as to the organization of a poor-house. State how the food should be purchased and stored; what stock register of it should be kept, and by whom; how given out to be ground; what the grinding task should be; how it should be received back and tested when ground; how given out to the cooking department; how information is to be given to the store-keeper or the head of the cooking department as to the number of rations required for adults and children, for ordinary, special, or sick paupers; in what way and in what vessels the food should be cooked; with how much water and fuel; what the weight of the cooked ration should be; whose duty it should be to test it; how it should be served out to the people; what discipline should be enforced among them while it is being served out and eaten. What precautions should be taken to see that it is eaten when received and not sold or exchanged, and that the children's portions are not taken from them by their parents or other adults? Under what circumstances should warm clothing be given, of what description, and at what probable cost per head? State what the rules of the poor-house should be as to the hours of rising, ablution, calling the roll-call, distributing food, going to and returning from work, and going to sleep. What arrangements should be made for personal ablution and washing clothes? What supervision is necessary to separate and take in time to hospital those who begin to sicken, or to distribute medicine to such as require it but are not sick enough for hospital? State what work the paupers can be set to, what is most suitable, for what cases, and how labour is to be enforced. What establishment is required (per hundred paupers) for cooking, grinding, sweeping the enclosures, cleaning the latrines, maintaining discipline, fetching water, or wood or grass for thatching, removing the sick to hospital, or carrying out and burying the dead? To what extent may such duties be performed by the stronger of the paupers, and in case suitable persons cannot conveniently be obtained from among them, how should the necessary establishment be paid? What amount of general supervision is necessary? What registers should be kept up as to cash outgoings, stores in stock and issued, daily number fed, and daily expenditure of food, sickness, and death? page 252.

28. Poor-house Hospital.

Refer to the questions regarding a hospital attached to a relief-work, and consider how far the arrangements suitable for such an establishment would also be applicable to a hospital attached to a poor-house. If any difference of system seems desirable, state in detail what seems requisite - - page 271.

29. Drafting of Inmates of Poor-house to Relief-works.

What system would you pursue for drafting into a relief-work those inmates of a poor-house who recover strength and health there and become fit for labour? - - - - - page 274.

30. Relief of Parda-nashin Women.

There are two classes who ordinarily receive gratuitous relief without being inmates of poor-houses. The first is parda-nashin, or gosha, women. What test can be applied to prove their necessity? Would you inquire into their cases through an official or a non-official? Supposing they have hitherto been dependent on a person who now refuses to support them, would you admit them to relief, or require him to support them if he is able to do so (1) *if they have close natural ties to him,* (2) *if they have not? Supposing the necessity of relieving them to be established, how would you relieve them, with money or food, or by giving work, such as cotton to spin, or grain to grind? How often should this relief be given, and in what quantity? When, and under what circumstances, should this relief cease? Have cases occurred in which dependants of persons in easy circumstances have claimed or obtained relief, and how have such cases been dealt with?*

page 275.

31. Village Relief of Infirm or Sick.

Another class consists of the sick, infirm, cripples, and bedridden folk, in towns or villages, who cannot leave their homes. How would you organize a system for relieving them? How inquire into and ascertain their cases? How convey relief to them when they are put on the registers, and what relief should it be? When should relief of this kind be closed? - - - - - - page 280.

32. Orphans and Deserted Children.

What has been held to be the duty of Government in respect to orphans or deserted children, and what appears to be the correct principle to follow? What number of such children have been thrown on the State during the recent famine? What arrangements have heretofore been made for receiving and supporting them, and what has been their ultimate destination? What have been the practical results of the measures thus taken in the past? What appears to be the best system to adopt in the future? - - - page 285.

33. Purchase of Grain by Government and Sale Below Market Rate.

Another form of relief, independent of a labour test, is by purchasing grain and selling it at or below cost price, and consequently below the retail market rate. Was this measure resorted to in your district, under what circumstances, and with what results? Do you consider that there are any conditions under which it is proper for Government to have recourse to such a step? (This question does not refer to the propriety of Government importation generally, but of importing or purchasing in order to sell cheaper than the market rate) - - - - - - - - - - - - - page 288.

SECTION 3.—MISCELLANEOUS.

34. Proportion of Persons Relieved to Whole Population.

State as nearly as practicable the proportion that the whole number of persons that were in receipt of relief in any form in your district on a selected day, or on the average of some week, when the recent famine was at its height, bears to the whole population. Of the whole number so receiving relief, what were the proportions under the following heads :—

1. *On relief works* - - - - - { *Adult males.* / *„ females.* / *Children.*
2. *Artizans specially employed (if any) as such* - - { *Adult males.* / *„ females.* / *Children.*
3. *In poor-houses (resident)* - - - - - { *Adult males.* / *„ females.* / *Children.*
4. *Relieved non-resident (para. 30)* - - - - { *Adult males.* / *„ females.* / *Children.*
5. *Relieved in villages (para. 31)* - - - - { *Adult males.* / *„ females.* / *Children.*
6. *Others, not resident* - - - - - - { *Adult males.* / *„ females.* / *Children.*

page 293.

35. Emigration.

Has Government ever attempted to organize emigration, permanent or temporary, from districts suffering from famine to other parts of India, or foreign countries, as a relief measure? If so, with what success? Under what circumstances could any such emigration be organized or encouraged? To what extent has emigration been resorted to by the people voluntarily? Have any gone beyond sea? Have any permanently gone off to settle in other parts of India? How many (approximately) left their district on a temporary expedition to search for food or employment elsewhere during the recent famine? Did they go alone or with all members of the family, and with their cattle and property? Where did they go to, and were their hopes of alleviating their distress realized? How many (approximately) have not come back, and how many are supposed to have died? - - - - - - - - page 297.

36. The Control of Aimless Wandering.

If famine-stricken people begin to emigrate to a part where it is known they would not find things better than in the country they left, or if they wander aimlessly from their homes, settling nowhere, should steps be taken to stop this, and how? Would you employ the police under any circumstances to turn them back, or to compel them to go to relief-works or poor-houses? or would you let them learn by their own experience? If they crowd into a town, say the head-quarters of the district or the province, would you do anything to stop them on the way, or to prevent their begging and straggling about the town when they get there? Refer to paragraph 25 in answering this question, and add anything that seems requisite in relation to the points now raised - - - - - - - - - - - page 304.

37. Remission and Suspension of the Revenue Demand.

Is it a recognized feature of the Revenue administration in your district to give relief by the remission or suspension of the demand for land revenue when the crops fail? If there are any established rules, quote them. Is the land revenue assessment based on the principle that profits of good years should cover losses in bad years? Is it assumed that a sufficient margin of profit is left to the landholders to admit of the regular payment of the revenue under all vicissitudes of season, or only in the ordinary fluctuations that occur, excluding seasons of extreme drought? What is the practical state of the case? How far is it found to be possible to collect the land revenue in a year when the crops have totally failed, without pressing unduly on the landowners? What amount of failure of crops is held to justify what amount of leniency in collection? Where the occupier of land pays rent to a landlord, how is the payment of such rent affected by failure of crops, and to what extent does the remission or suspension of land revenue lead to corresponding treatment of rent? What are the arguments in favour of giving relief in the form of remission or suspension, respectively? To what extent has it been customary in actual practice in your district or province to remit or to suspend in such cases? Up to what limits do you consider that it is practicable to recover in future years the postponed demand of bad years, or does suspension practically mean remission in all but a few cases? - page 307.

38. Village Inspection. Disinclination to Seek Relief.

Is the duty of searching out distress in time of famine in the villages and the people's homes one that properly belongs to Government, or is it sufficient for Government to offer means of obtaining relief, and to expect that the famine-stricken will come of themselves and make use of those means? If it is proper to depute special officers to inspect villages and urge the people to accept the relief offered, what steps do you consider necessary for strengthening the ordinary district staff and enabling them to carry out this duty? What class of officers should be selected for such duties, and what areas assigned to them? May these officers best be servants of Government, or should they be taken from the non-official class? What should be their precise duties, and what supervision should be provided to see that they carry out those duties? At what period may it become expedient to organize such an extra famine establishment? To what extent, and under what general circumstances, has there been any tendency on the part of the people in distress to reject measures of relief offered to them? Where determined disinclination has been shown by any portion of the population to leave their villages and go to relief-works or poor-houses, what has been the probable cause of such a state of things? Can it be traced to improper arrangements for the reception of applicants for relief, or for admitting them to employment on works, to an insufficient allowance of food, or wages, or to any such causes? Can any other causes be named which may have conduced to the disinclination to seek relief, such as physical prostration, or habitual want of confidence in officials, &c.? - - - - - page 318.

39. Expediency or Otherwise of Storage of Grain by Government.

Did you in the recent famine lay in any stores of Government grain for the purpose of feeding labourers or inmates of poor-houses? Was anything done to stimulate trade by offering advances of money or any kind of assistance or bonus to merchants? Did the Government purchase grain, import it, and sell it again to the general public with the object of keeping the local markets supplied? If any such measures were taken, state the circumstances under which the transactions occurred, the reasons which led you and your superior officers to think them necessary, the manner in which grain was purchased and imported, the quantity, cost, and price at which it was disposed of, and the monetary gain or loss realized; or the nature of the advance or bonus given to traders: whether it checked private imports; also the general effect of the whole transaction. If you did not take any such step, do you now consider that it would have been better to do so? If you did it, or it was done, do you think any error was committed in so acting? And generally what are the conditions under which such measures are proper and necessary? - - - - page 327.

40. Ability of the Administration to Cope with Famine Emergencies.

Do you consider that the events of the last famine have shown that the system of civil administration in your district is strong enough to bear the unusual strain laid upon it, or that any defects have been discovered which might be obviated? Is the area of your district too large for one man to supervise, or of a convenient size? Are your official relations with the officers of the Public Works Department in your district such as are most conducive to the carrying on of relief work? What staff of civil officers have you to carry out your orders, and what duties and responsibilities attach to each? Is that staff of the proper strength and organized in the best possible way, or can you suggest any improvements? Have your native subordinates as a class shown energy, capacity, humanity, and physical activity in carrying out relief measures, or have they been wanting in these qualities? Give a general outline of the manner in which the relief operations in your district were conducted. To what extent did your control go, to what extent was there local independence of action? How was the chain of responsibility maintained between the superior and subordinate officers? How far were you yourself controlled in the relief administration, and how far left to act on your own discretion? page 335.

41. System of Correspondence and Chain of Official Responsibility.

Through what channels have orders relating to famine relief reached you from the Government? If references were sent by you, and orders received by you, from the Government or its representative in the

Famine Department direct, state whether you think that course operated well, whether the necessary business was rapidly conducted with consistency and precision, and with due attention to the exigencies of special circumstances and localities, &c.? Do you think this course best, or that the work would have been more effectually done had there been an official (whether Commissioner or Member of the Revenue Board, or by whatever name called) who should have been in administrative charge of a group of districts, and would thus have become acquainted with their wants and circumstances by personal inspection? If, on the other hand, you received the orders of the head of the Government through any intermediate authority, state if, in your opinion, there were any disadvantages attaching to this course, such as weakening the sense of personal responsibility in the local executive officers, delay in replying to references, or want of uniformity of method in different parts of the province, and so forth? - - - - - - - page 346.

42. Financial Control and Audit of Expenditure.

Under what financial control were the operations placed as to the supply of funds and authority to spend money, or sanction and commence works? State generally the system adopted, and what you think of it? Mention if any irregularities or frauds took place in the application of money, or were supposed to have taken place, and how and to what extent? Is it anywhere currently reported that any persons of any class engaged in the relief operations have become subsequently enriched, or is there reason to think that peculation or malversation were rare and exceptional? Were sufficient means available for checking the expenditure and rendering and auditing the accounts? How was this part of the operations conducted and with what general results; has the whole of the outlay been satisfactorily accounted for or not, and if not, what deficiencies have arisen and in what manner; and how have they been dealt with? - - page 349.

43. Proper Field for Private Charity in Various Stages of Famine.

What do you consider the proper field for private charity in the beginning, at the height, and in the decline of a famine? To what objects should it be applied, and through what channels? Should the funds be expended by Government servants who are also at the same time carrying out relief measures? Should they be expended in saving life and giving food? or should that be left entirely to Government, and the charitable funds confined to other objects, such as setting people up again in their pre-famine position, starting them again with a little capital, and thus assisting them with appurtenances which, though not luxuries, are not absolute necessities of life? - - - - - - - - - page 353.

44. After Effects of Famine on the Country.

What has the effect of famine been in your experience on the subsequent condition of a district? Where villages were deserted have they been permanently depopulated, or has the population returned to them? Has much land been thrown out of cultivation, and for how long has this decrease in the cultivated area continued? Has it been due to want of cultivators, of plough bullocks, or of capital and of seed grain? - page 355.

45. After Effects of the Recent Famine.

In the case of the recent famine what effects, such as those just referred to, have been produced? How many villages have been deserted, how many have been seriously affected; what is the reduction in the area under cultivation now compared with what it was two years ago? How many holdings have been abandoned? Have the landlords, or ryots with whom the settlements are made, been permanently impoverished in a serious degree? Is there any reason to anticipate increased difficulty in realizing rents or land revenue for the next few years by reason of the recent pressure, if the seasons are favourable? What proportions of landlords or ryots are likely to be dispossessed of their holdings through the action of the Revenue or Civil Courts, as a consequence of distress produced by the famine? Has the agricultural population, which has no beneficial interest in the land, suffered more in proportion than other classes? - - - - page 358.

CHAPTER IV.

FAMINE PREVENTION.—PREPARATION OF SCHEMES OF WORK FOR FUTURE USE.

1. Practical Use of such Schemes.

After 1868 the Government of India gave instructions that schemes of works should be prepared, suitable for execution in the event of famine. Were such schemes ever prepared? If so, have they been found of practical use during the recent pressure? - - - - - - - page 362.

2. Difficulties of keeping them up.

Do there appear to be any difficulties in the way of keeping up such schemes in a form which will be really useful in the future? - - - - - - - - page 364.

3. Class of Works to be included.

What classes of works would be included in them? Would the works differ in character from the ordinary works of utility brought forward for execution from time to time? And, if so, how? Give a practical example of works now considered suitable to be taken up as elements of such a scheme in two or three districts, if possible - - - - - - - - page 367.

4. Authority for their Execution.

Should the works in such a scheme be looked on as immediately available for giving employment as relief works at the discretion of the local Governments, or under what circumstances might the authority of the Government of India be held to be required? - - - - - - page 375.

5. Responsibility for their Maintenance.

If severe drought, calling for the employment of labour on a very large scale, and in an exceptional manner, occurs at comparatively long intervals, how will it be best practicable to arrange for suitable projects, which, though suspended, must yet be fit for early execution? On whom should the responsibility of maintaining such schemes in an efficient state rest, and how could it be enforced? - - - - page 376.

6. Their Relation to Numbers requiring Relief.

What number of persons is likely to be thrown on relief works in an extreme case, and how should such a scheme be framed as to indicate what portions of it should be taken up on any particular occasion in order to provide for the employment of the anticipated numbers and for the length of time required? - page 378.

7. Should they include Works of doubtful Financial Value?

Should the works include only such as had been sanctioned for construction under the regular rules on such subjects, or would it under any circumstances be right to include in such a scheme large works to which sanction had not been given on account of their doubtful financial value, and their not being of a character that would justify their execution under ordinary circumstances? How far might there be risk of the Government being led into unprofitable expenditure in the completion of works of this sort begun under plea of famine pressure? - - - - - - - - - - page 385.

8. Value of Unskilled Labour during Famine.

Is it probable that the amount of work executed by unskilled labour on any large work during the pressure of famine would be such that the exclusion of the expenditure on it would reduce the ultimate cost of such a work in any important degree, so as to be likely to render it remunerative, though if otherwise executed it would not have been remunerative? Can any illustration be given of such a case as that last referred to? - - - - - - - - - - page 387.

9. Should large Works not sanctioned by proper authority be included.

Could large works not sanctioned by proper authority, for whatever reason, be properly included in the scheme of works, and if so, what preliminary steps should be regarded as requisite before actually putting them in hand if severe scarcity arose? - - - - - - - page 390.

10. Risks attending Absence of prepared Schemes.

Considering the circumstances under which labour is applied on relief works, is the risk of waste by reason of there being no regularly prepared scheme ready really great? Is there danger, in the absence of suitable projects ready for immediate execution, of the suffering population being left without proper relief until the necessary relief works have been prepared for execution? How far might the intelligent action of the several branches of the Public Works Department be made to supply, from among projects in course of execution or ripe for it, what was requisite? Could this end be sufficiently secured by distinctly making the Public Works Department responsible for bringing forward suitable works whenever pressure from scarcity arose; and, so far as was necessary and practicable, setting aside or postponing the ordinary work not suitable for relief purposes? - - - - - - - - page 392.

11. Difficulty of finding suitable Relief Works.

Has there been practical difficulty in finding suitable relief works during the recent pressure? If so, where and how? Make any suggestions on the subject of providing relief works which may aid in meeting the difficulties that are found to arise in practice - - - - - - page 396.

IRRIGATION WORKS.

12. Cost of Construction and Maintenance. Area Irrigated and Value of Crops.

What is the capital expended to date in the construction of the principal canals in your province, and what the yearly interest on that capital? What is the annual cost of maintenance? What is the present acreage irrigated? From this calculate the several corresponding rates per acre. What is the average local value per acre of the chief crops raised by irrigation from these canals? What is the difference between this and the average value of such crops raised without irrigation? - - - - page 400.

13. Water Rate and Increased Rent, Revenue or Owners Rate.

What is the amount per acre paid for the use of water for the chief crops by the occupier in the shape of water rate? What is the ordinary increased rent on irrigated over unirrigated land? What is paid by the proprietor per acre in the shape of land revenue or owner's rate? Is there any reason why a proprietor, whether paying land revenue or not, the yearly value of whose lands is increased by irrigation from canals constructed and maintained at the public cost, should not contribute to the State in return for the advantage he thus obtains? What seems to be the best way of obtaining such a contribution from him, first, where the land revenue is liable to revision; secondly, where it has been permanently settled; and thirdly, where the land is not charged with revenue? - - - - - - - - - page 410.

14. Collection of Canal Dues. Distribution of Water.

In what way, and under what law, are the canal dues recovered in your district? Has there been found to be any difficulty in applying the law in any particular, and if so, how? And what better system can be suggested? It is commonly said that water is used in too lavish a manner by agriculturists when the charge is made on the irrigated area, or otherwise than by the quantity supplied. Is this the case, and what remedies can be applied? Will raising the water rate have the effect of preventing this? To what extent is this likely to have a tendency to throw the poorer crops out of cultivation, or to confine irrigation to the more paying crops? Is water charged for by quantity, and can this be done? Is it ever charged for on a contract system, a whole village or the proprietors or cultivators of a certain portion of the village lands paying a lump sum periodically for the water supplied to those lands through a given aperture? Is this system a good one? What are the difficulties attending it? Where it is adopted what arrangement is made for distributing the water among the cultivators? Have complaints practically arisen where the system has been in force, and how could they best be guarded against? Does there appear to be any objection to making such a system of contract compulsory where the general advantage of the cultivating community calls for increased economy in the use of a limited supply of water? - - - - - - page 419.

15. Water Rate in relation to Cultivator's Margin of Profit.

Having reference to the margin of profit on irrigated crops commonly left to a cultivator after payment of the existing water rates, could these rates be increased without trenching unduly on that margin of profit? How would raising the water rates operate on a cultivator under a lease, and how on the revenue-paying proprietor, if it took place during the currency of the lease or settlement respectively? - page 425.

16. Preparation of Statistics.

How are the statistics of irrigation recorded, and are revenue reports of the chief irrigation works prepared by the canal administration, and in what form? Do you think them necessary? To what extent do you think the record of such statistics valuable or necessary for the proper administration of irrigation works? To what degree of detail may the record usefully go, and how may the facts be best collected and recorded? - - - - - - - - - - page 428.

17. Some mischievous Effects of Canal Irrigation.

What evidence is there as to any mischief being caused by canal irrigation, such as by increasing sickness, or injury to the land by raising the water level, or production of efflorescent surface salts, &c.? To what extent has drainage accompanied, or ought drainage to accompany, canal irrigation? Has the provision of needful drainage been neglected? Is additional drainage needed to meet the effect of the increased quantity of water thrown on the surface, or to remove obstructions caused by canals, channels, water-courses, &c.? - - - - - - - - - - page 430.

18. Purification of Soil.

Has canal irrigation anywhere been combined with attempts to improve soils previously unfit for cultivation from the presence of noxious salts? - - - - - - page 433.

19. General Effect of Irrigation on the Character of Cultivation.

What has been the general effect of continued canal irrigation on the character of the cultivation? Has the irrigated area of the poorer grains, which supply the chief part of the food of the people, been gradually diminished, and has the area of the better crops been increased? If the area of poorer crops has been reduced, is this due to conditions of soil or position of lands and difficulties of access from the water supply, or to the relative profits in the one case being greater than in the other? State the general facts as

to the changes in the areas irrigated during the last 10 or 12 years, and make any comments that seem desirable. Is there reason to suppose that prolonged irrigation damages the land under any circumstances? Is there any evidence of a reduced production? - - - - - - page 434.

20. Inundation Canals and Wells.

Under what conditions is an inundation canal, giving water only during the rainy season, found to be useful? To what extent is it probable that such irrigation could be usefully attempted in the North-Western Provinces, or elsewhere where not now applied, and where a water supply is available? How far would such irrigation be useful for rabi or kharif cultivation? How far may wells be depended on to supplement the deficiencies of supply in such a canal during the dry season? - - - page 440.

21. Canal Administration.

What is the system of canal administration? Who is responsible for distributing the water and for collecting the dues? May the functions of the engineer in charge of the works and the technical business of the water supply, and those of the officer responsible for seeing that the available water is distributed equitably to the land that most requires it, and securing water to the extension of irrigation and the realization of the canal revenues and their due assessment and increase, be best combined, or should they be kept separate? State the reasons for your opinions - - - - - - - page 442.

22. Canal Administration.

What system actually prevails in your province, and if you think it susceptible of improvement, say how? Do you think a special canal law necessary to admit of proper administration? And have you such a law, and is it satisfactory? - - - - - - - - page 442.

23. Slow Extension of Use of Canal Water.

Why has the extension of the use of canal water been commonly so slow? What has been the nature of the obstacles, and how can they best be avoided or removed? Are any of the canals now in an unsatisfactory condition in these respects, and can any sufficient explanation be given of the want of progress? This question would specially apply to the Orissa canals, and to the works of the Madras Irrigation Company, with reference to which last see question No. 30. Have any of your canals practically reached the state in which any further extension is not likely, or is likely to be small? Say how far this is the case in each. Are difficulties met with in preparing land for irrigation for the first time, in the way of sub-dividing fields, or levelling the surface, or formation of water-courses, which require more time and money than can be supplied by a limited population otherwise than slowly? If such difficulties are met with, how may they best be removed? Does the existing system provide sufficiently for making advances to cultivators to adapt their land to irrigation, and if not, what changes are desirable? Does shortness of supply during the hot season materially affect progress of canal irrigation? - - - - - page 449.

24. Mode of meeting Charges on unremunerative but necessary Works.

Where the financial prospects of projected irrigation works are not such as to appear to justify the outlay of public money on them, in the expectation of the income being at an early date sufficient to cover all the expenses, including the charge of interest on capital outlay, do you think that a special rate to make good the deficiency might properly be charged on the district for the benefit of which the works are designed, or on the land that would be protected, and if so, under what conditions? If not, what are your objections? How would you meet the case put in this question if not by some such special rate? Is it more equitable to place a compulsory charge on other districts, which can probably derive no advantage from the works, or only on the districts or lands that can benefit? If the protection to be given by such works to particular districts is deemed of great importance, under conditions such as have been above stated, what course do you think should be taken, having regard to the necessity for protecting the general finances of the country? page 454.

25. Existence of Customary Claims to Use of Water.

Have any customary claims or prescriptive rights in the use of water from tanks or canals or water-courses grown up in your district? What is their nature and history? Have they led to inconvenience in respect to the general utility of such works to the agricultural community that might benefit by them? Would it, in any case that you know, be desirable to buy out such rights as exist, and to prevent the accretion of others? Have such claims or rights to the use of the water in the upper parts of rivers obstructed the application of the water in the lower parts to purposes of irrigation, or vice versâ? If this has happened in any case, could any remedy be applied which would be equitable? How should disputes on such points be settled? In cases in which the action of the ordinary courts would be impossible or inapplicable, what principles should govern decisions in such disputes? - - - - - - page 459.

26. Maintenance of certain Works by Cultivators.

If anywhere it be found that the tanks, &c. are so small and numerous that Government cannot practically carry out their supervision and maintenance, would it be expedient that steps should be taken for imposing on the cultivators or proprietors who benefit by the water the duty of carrying out all necessary repairs or works for securing the irrigation in an efficient condition? Do you think this principle should apply to all tanks, great and small alike? Might the obligation equitably be held to attach without any corresponding relief being given, or should any privileges (such as lowered rent) be conceded to the ryots, if they are charged with the duty of repair? To what extent should the liability go; whether only to minor works not requiring engineering skill, or to all work? How could such a duty be best enforced, and any neglect of repairs checked at its inception? And what penalties should be legalised to punish such neglect when it does occur? Is there any local or other fund from which to pay for such work if it consisted of more than ordinary earth-work? Could such a fund, in case of need, be established? - - - page 464.

27. Obligation of Zemindars to maintain Tanks, &c.

How far do obligations rest on zemindars or other superior landholders to maintain tanks or other irrigation works? Are such obligations properly recognized where they exist, or is any additional power called for to enforce them? Where they do not now exist, are there circumstances or localities in which it would be expedient to impose them on some such basis as that referred to in question No. 26, and if so, on what general system should it be done? - - - - - - - page 469.

28. Madras Act No. VII. of 1865 (Water Cess).

What are the rules made under Madras Act No. VII. of 1865? Give a statement of the works to which this Act has been applied, and what is the revenue realized by means of it? Give an illustration of the cases in which exemptions are granted under section 4 of the Act. What is the nature of the receipts entered in the Miscellaneous Land Revenue under the head "Cess for repair of tanks?" - - page 471.

29. Distribution of Water where Supply is deficient.

How has the distribution of water been fixed where the supply is less than the demand? Do customary or other established rights interfere with the extension of irrigation from any Government canal, and if so, where and to what extent, and what remedy should be applied? Is it the duty of anyone to see that the available water is made use of to the best possible advantage for the community as a whole, and on whom does the duty fall? Is there any difference in the system of supplying canal water to lands under ryotwari settlement and under zemindari settlement, where the two exist, and what is it? - - - page 472.

30. Management by private Agency.

Is there any special difficulty introduced into the spread of irrigation by the intervention of the agency of a company in the management of a canal, and how could such difficulties be best overcome? - page 473.

31. Direct and indirect Returns.

In reckoning the return obtained from the outlay on canals or other irrigation works, is full credit given them under the existing system of accounts? Where separate water rates are charged on the cultivators, is the indirect profit obtained by the increase of land revenue properly taken into account? Where there has been no distinction made in the payment to Government between the charge made as land revenue and that for the supply of water, is the canal revenue fairly estimated at present, and if not how do you think it would be best reckoned? - - - - - - - - - - page 474.

INDEX OF EVIDENCE IN REPLY TO INQUIRIES OF THE FAMINE COMMISSION.

Name.	Office.	Experience.	——
		PUNJAB.	
Mr. A. H. Benton -	Officiating Deputy Commissioner, Karnal.	No famine experience. Scarcity, Karnal, 1878.	II.—Q. 1, p. 2. Q. 2, p. 12. Q. 5, p. 26. Q. 6, p. 43. Q. 7, p. 63. Q. 9, p. 71. Q. 10, p. 77. Q. 11, p. 80. III.—Q. 26, p. 243.
Mr. W. Coldstream - -	Deputy Commissioner, Hoshiarpur.	Scarcity Hoshiarpur, 1877–78.	II.—Q. 2, p. 11. Q. 3, p. 19. Q. 4, p. 23. Q. 5, p. 26. Q. 7, p. 62. Q. 9, p. 70. Q. 10, p. 77. III.—Q. 22, p. 223.
Major E. C. Corbyn -	Deputy Commissioner, Shahpur.	- - - -	IV.—Q. 12, p. 405. Q. 13, p. 410. Q. 14, p. 421.
Major H. Grey, C.S.I. -	Political Agent, Bahawalpur.	Irrigation experience, Ferozepore District, Bahawalpur State.	IV.—Q. 19, p. 434. Q. 23, p. 450.
Mr. J. B. Lyall - -	Settlement Commissioner, Mooltan and Derajat.	Muzaffargarh Canal system	IV.—Q. 17; p. 431. Q. 23, p. 450.
Lieutenant-General Maclagan, R.E.	Secretary to Government Public Works Department.	- - - -	IV.—Q. 1, p. 362. Q. 2, p. 364. Q. 3, p. 367. Q. 4, p. 375. Q. 5, p. 376. Q. 6, p. 378. Q. 7, p. 385. Q. 10, p. 393.
Muhammad Hayat Khan, C.S.I.	Judicial Assistant Commissioner, Gurdaspur.	Relief works, Gurdaspur, 1877.	II.—Q. 2, p. 11. Q. 5, p. 25. Q. 6, p. 42. Q. 7, p. 62. Q. 8, p. 67. Q. 11, p. 80. III.—Q. 2, p. 90. Q. 6, p. 129. Q. 7, p. 156. Q. 8, p. 165. Q. 9, p. 167. Q. 10, p. 168. Q. 15, p. 196. Q. 23, p. 227. Q. 30, p. 275. Q. 32, p. 285. Q. 33, p. 288.
Mr. E. Nicholl - -	Secretary, Municipal Committee, Amritsar.	Charge of relief work, Amritsar, 1868–69.	II.—Q. 4, p. 23. Q. 6, p. 42. Q. 7, p. 63. Q. 9, p. 71. Q. 10, p. 77. III.—Q. 2, p. 91. Q. 5, p. 117. Q. 6, p. 129. Q. 7, p. 156. Q. 10, p. 169. Q. 11, p. 176. Q. 18, p. 207. Q. 24, p. 236. Q. 25, p. 239. Q. 26, p. 243. Q. 29, p. 274. Q. 31, p. 280.
Mr. E. O'Brien - -	Settlement Officer, Muzaffargarh.	- - - -	IV.—Q. 12, p. 405. Q. 13, p. 410. Q. 14, p. 421. Q. 15, p. 426. Q. 16, p. 428. Q. 17, p. 431. Q. 21 and 22, p. 444. Q. 23, p. 450. Q. 25, p. 460. Q. 26, p. 464.
Captain J. W. Ottley, R.E.	Officiating Assistant Secretary to Government P.W. Department, Irrigation Branch.	- - - -	IV.—Q. 12, p. 403. Q. 13, p. 410. Q. 14, p. 419. Q. 15, p. 426. Q. 16, p. 428. Q. 17, p. 430. Q. 18, p. 433. Q. 19, p. 434. Q. 20, p. 440. Q. 21 and 22, p. 442. Q. 23, p. 449. Q. 24, p. 455. Q. 25, p. 460. Q. 29, p. 472. Q. 31, p. 474.
Mr. Gore Ouseley - -	Financial Commissioner -	- - - -	III.—Q. 35, p. . Q. 36, p. 304. Q 37, p. 307. Q. 40, p. 336.
Lieutenant-Colonel J. B. Parsons.	Deputy Commissioner, Gujrat.	Relief operations, Karnal, 1868–69.	II.—Q. 1, p. 1. Q. 2, p. 11. Q. 3, p. 19. Q. 6, p. 42. Q. 7, p. 62. Q. 8, p. 67. Q. 9, p. 70. Q. 10, p. 77. Q. 12, p. 83. III.—Q. 7, p. 156. Q. 10, p. 169. Q. 11, p. 176.
Mr. T. Roberts - -	Deputy Commissioner, Gurgaon.	Scarcity, Gurgaon, 1877–78.	II.—Q. 1, p. 2. Q. 2, p. 11. Q. 3, p. 19. Q. 4, p. 23. Q. 6, p. 42. Q. 7, p. 62. Q. 8, p. 67. Q. 9, p. 71. Q. 10, p. 77. Q. 12, p. 83. Q. 13, p. 87.
Mr. C. Roe - -	Settlement Officer, Mooltan.	Mooltan inundation, Canal system.	IV.—Q. 12, p. 405. Q. 14, p. 421. Q. 25, p. 461.
Mr. J. D. Tremlett -	Officiating Commissioner and Superintendent, Hissar.	Muzaffargarh Canal system.	IV.—Q. 13, p. 411. Q. 14, p. 421.
Captain H. Wood - -	Officiating Deputy Commissioner, Rawalpindi.	- - -	II.—Q. 1, p. 1. Q. 2, p. 11. Q. 3, p. 19. Q. 9, p. 70.
		NORTH-WEST PROVINCES.	
Mr. G. Adams - -	Deputy Commissioner, Jhansi.	- - - -	II.—Q. 6, p. 46. Q. 9, p. 72. Q. 10, p. 78. IV.—Q. 9, p. 391.
Mr. C. C. Anderson -	Officiating Chief Engineer, Irrigation Works.	- - - -	IV.—Q. 12, p. 406. Q. 13, p. 412. Q. 14, p. 423. Q. 16, p. 429. Q. 17, p. 432. Q. 18, p. 434. Q. 19, p. 438. Q. 21 and 22, p. 444. Q. 23, p. 450. Q. 24, p. 456. Q. 25, p. 461. Q. 29, p. 473. Q. 31, p. 475.

Name.	Office.	Experience.	—
	NORTH-WEST PROVINCES—*continued.*		
Mr. J. G. Anderson -	Deputy Commissioner, Sitapur.	- - - -	IV.—Q. 4, p. 375.
Mr. A. Atkinson - -	Executive Engineer, Mainpuri.	- - - -	III.—Q. 7, p. 156. Q. 42, p. 349.
Mr. H. C. Barstow, C.S. -	Collector, Ghazipur -	- - - -	IV.—Q. 3, p. 368. Q. 9, p. 391.
Mr. R. C. Battie - -	District Engineer -	- - - -	III.—Q. 20, p. 217.
Mr. W. Blennerhasset, C.S.	Assistant Commissioner, Rae Bareli.	- - - -	II.—Q. 2, p. 13. Q. 6, p. 48. Q. 7, p. 64. Q. 8, p. 68. Q. 10, p. 78. III.—Q. 5, p. 119. Q. 34, p. 294. Q. 37, p. 312. Q. 38, p. 319. Q. 40, p. 337. IV.—Q. 11, p. 396.
Surgeon-Major E. Bonavia	Civil Surgeon, Fyzabad -	- - - -	III—Q. 6, p. 133. Q. 23, p. 228. Q. 26, p. 246.
Board of Revenue (Mr. H. S. Reid and Mr. C. P. Carmichael).	- - - -	- - - -	III.—Q. 37, p. 312. IV.—Q. 12, p. 406. Q. 13, p. 411. Q. 14, p. 422. Q. 15, p. 426. Q. 17, p. 431. Q. 18, p. 434. Q. 19, p. 438. Q. 20, p. 441. Q. 23, p. 450. Q. 24, p. 456. Q. 26, p. 464.
Colonel H. A. Brownlow, R.E.	Officiating Inspector General of Irrigation Works.	- - - -	IV.—Q. 2, p. 365. Q. 3, p. 367. Q. 4, p. 375. Q. 5, p. 376. Q. 9, p. 391. Q. 10, p. 393. Q. 11, p. 396. Q. 13, p. 411. Q. 14, p. 422. Q. 15, p. 427. Q. 16, p. 429. Q. 17, p. 432. Q. 18, p. 434. Q. 19, p. 438. Q. 20, p. 441. Q. 21 and 22, p. 445. Q. 23, p. 451. Q. 24, p. 456. Q. 25, p. 461. Q. 26, p. 464. Q. 27, p. 469. Q. 31, p. 475.
Mr. A. Cadell, C.S. - -	Settlement Officer, Banda	- - - -	III.—Q. 37, p. 311.
Surgeon A. Cameron -	Civil Surgeon, Sultanpur	- - - -	III.—Q. 6, p. 133.
Lieutenant-Colonel F. E. A. Chamier, B.S.C.	Deputy Commissioner, Bara Banki.	- .. - -	II.—Q. 4, p. 23. Q. 9, p. 72. III.—Q. 5, p. 118. Q. 6, p. 133. Q. 7, p. 157. Q. 11, p. 178.
Lieutenant-Colonel E. G. Clark, B.S.C.	Deputy Commissioner, Sultanpur.	- - -	IV.—Q. 11, p. 396.
Mr. A. Colvin, C.S. -	Collector, Bijnor -	- - - -	II.—Q. 1, p. 2. Q. 2, p. 12. Q. 3, p. 20. Q. 4, p. 23. Q. 5, p. 27. Q. 6, p. 44. Q. 11, p. 80. Q. 12, p. 84. Q. 13, p. 88. III.—Q. 5, p. 118. Q. 6, p. 123. Q. 8, p. 165. Q. 10, p. 169. Q. 11, p. 177. Q. 12, p. 185. Q. 13, p. 189. Q. 16, p. 200. Q. 17, p. 202. Q. 19, p. 210. Q. 20, p. 217. Q. 25, p. 239. Q. 27, p. 253. Q. 34, p. 293. Q. 37, p. 307.
Mr. R. A. Car[illegible] - -	Executive Engineer, Bulandshahr.	- - - -	II.—Q. 6, p. 44. III.—Q. 7, p. 156. Q. 11, p. 177. Q. 17, p. 202.
Mr. W. W. G. Carnwall, C.S.	Collector, Cawnpore -	- - - -	II.—Q. 1, p. 3. Q. 2, p. 13. Q. 5, p. 28. Q. 6, p. 45. Q. 7, p. 64. Q. 8, p. 68. Q. 11, p. 81. Q. 13, p. 88. III.—Q. 4, p. 111. Q. 11, p. 178. Q. 17, p. 203. Q. 34, p. 293. IV.—Q. 3, p. 369. Q. 9, p. 391.
Sir George E. W. Couper, Bart., K.C.S.I., C.B., C.I.E.	Lieutenant-Governor -	- - -	III.—Q. 2, p. 96.
Mr. W. Crooke, C.S. -	Assistant Magistrate, Gorakhpur.	- - - -	II.—Q. 7, p. 64. Q. 8, p. 68. Q. 9, p. 72.
Captain F. Currie, Beng. Cav.	Officiating Deputy Commissioner, Lucknow.	- - - -	II.—Q. 6, p. 48. Q. 9, p. 72. Q. 11, p. 81. III.—Q. 6, p. 132. Q. 19, p. 211. Q. 40, p. 336.
Mr. C. A. Daniell, C.S. -	Commissioner, Benares -	- - - -	II.—Q. 6, p. 47. Q. 7, p. 64. III.—Q. 6, p. 131. Q. 36, p. 305.
Surgeon A. Deane - -	Civil Surgeon, Ghazipur -	- - - -	III.—Q. 6, p. 132. Q. 28, p. 272.
Sir Digbijai Singh, G.C.S.I.	Maharaja of Bulrampur -	- - - -	II.—Q. 1, p. 4.
Mr. R. M. Edwards, C.S. -	- - - -	- - - -	IV.—Q. 1, p. 362. Q. 4, p. 375. Q. 5, p. 377. Q. 10, p. 393. Q. 11, p. 396.
Surgeon-Major J. Ellis -	Civil Surgeon, Sitapur -	- - - -	III.—Q. 6, p. 134.
Surgeon W. A. D. Fasken, M.B.	Civil Surgeon, Mainpuri -	- - - -	III.—Q. 26, p. 244.
Lieutenant-Colonel J. F. L. Fisher, B.S.C.	Senior Assistant Commissioner, Garhwal.	- - - -	II.—Q. 5, p. 29. Q. 6, p. 47. Q. 9, p. 72. III.—Q. 39, p. 327. Q. 43, p. 353. IV.—Q. 11, p. 397.
Colonel A. Fraser, R.E., C.B.	Chief Engineer - -	- - - -	III.—Q. 2, p. 92.
Surgeon P. J. Freyer, M.D.	Civil Surgeon, Azamgarh	- - - -	III.—Q. 26, p. 244. Q. 27, p. 256.
Mr. D. M. Gardner, C.S. -	Collector, Azamgarh -	- - - -	II.—Q. 6, p. 46. III.—Q. 33, p. 289. Q. 41, p. 347.
Mr. H.B. Harington, C.S. -	Deputy Commissioner, Unao.	- - -	II.—Q. 5, p. 30. Q. 6, p. 47. Q. 10, p. 78. IV.—Q. 8, p. 387. Q. 11, p. 396.
Dr. F. W. Higginson -	Civil Surgeon, Gonda -	- - - -	III.—Q. 6, p. 134.
Surgeon-Major A. H. Hilson.	Civil Surgeon, Agra -	- - - -	III.—Q. 6, p. 130. Q. 26, p. 244. Q. 28, p. 271.
Captain F. J. Home, R.E.	Officiating Superintending Engineer, Meerut.	- - - -	II.—Q. 6, p. 43. III.—Q. 3, p. 107. Q. 10, p. 169. Q. 11, p. 177. Q. 17, p. 201. Q. 20, p. 217. Q. 21, p. 221.

Name.	Office.	Experience.	——
	NORTH-WEST PROVINCES—*continued.*		
Surgeon-Major J. R. Jackson, M.D.	Civil Surgeon, Saharunpur	- - - -	III.—Q. 6, p. 131. Q. 26, p. 243.
Major W. Jeffreys, R.E. -	Superintending Engineer, Narora.	- - - -	II.—Q. 6, p. 44. III.—Q. 2, p. 91. Q. 3, p. 107. Q. 5, p. 117. Q. 11, p. 177. Q. 19, p. 210. Q. 20, p. 217.
Mr. J. Kennedy, C.S. -	Officiating Collector, Shahjahánpur.	- - - -	II.—Q. 1, p. 2. Q. 2, p. 12. Q. 3, p. 20. Q. 4, p. 23. Q. 5, p. 27. Q. 7, p. 63. III.—Q. 3, p. 107. Q. 11, p. 178. Q. 19, p. 211. Q. 25, p. 239. Q. 27, p. 255. Q. 32, p. 285. Q. 38, p. 319. Q. 45, p. 359. IV.—Q. 8, p. 388. Q. 10, p. 394. Q. 11, p. 397.
Mr. G. Lang, C.S. -	Collector, Aligarh - -	- - -	IV.—Q. 2, p. 365.
Mr. A. Lawrence, C.S. -	Collector, Agra - -	- - - -	II.—Q. 2, p. 12. Q. 4, p. 23. Q. 6, p. 45. Q. 9, p. 71. III.—Q. 5, p. 118. Q. 7, p. 157. Q. 11, p. 178. Q. 13, p. 189. Q. 15, p. 196. Q. 18, p. 207. Q. 19, p. 211. Q. 20, p. 217. Q. 21, p. 221. Q. 22, p. 224. Q. 31, p. 281. Q. 35, p. 297.
Mr. R. J. Leeds, C.S. -	Collector, Muttra - -	- - - -	II.—Q. 1, p. 3. Q. 2, p. 12. Q. 4, p. 23. Q. 6, p. 45. Q. 9, p. 71. III.—Q. 5, p. 118. Q. 6, p. 130. Q. 32, p. 285.
Major J. Liston, B.S.C. -	Deputy Commissioner, Lalitpur.	- - - -	II.—Q. 6, p. 46. Q. 7, p. 63. IV.—Q. 3, p. 369. Q. 4, p. 375.
Surgeon-Major J. H. Loch, M.D.	Civil Surgeon, Bellary -	- - - -	III.—Q. 23, p. 227.
Honorary Surgeon R. D. Lagg.	Civil Surgeon, Hardoi -	- - - -	III.—Q. 6, p. 131. Q. 14, p. 192.
Mr. J. J. F. Lumsden, C.S.	Officiating Commissioner, Rae Bareli.	- - - -	II.—Q. 1, p. 4. Q. 3, p. 20. Q. 4, p. 23. Q. 5, p. 30. Q. 6, p. 48. Q. 7, p. 64. Q. 9, p. 72. III.—Q. 24, p. 236. Q. 25, p. 240. Q. 31, p. 281. Q. 37, p. 308. Q. 40, p. 336. Q. 44, p. 355. Q. 45, p. 359.
Mr. J. C. Macdonald, C.S.	Superintendent, Tarai -	- - - -	IV.—Q. 3, p. 368.
Captain G. F. L. Marshall, R.E.	Executive Engineer, Saharunpur.	- - - -	III.—Q. 3, p. 106. Q. 7, p. 156. Q. 8, p. 165. Q. 9, p. 167. Q. 15, p. 196. Q. 20, p. 217.
Mr. C. W. Mellor, C.S. -	Officiating Collector, Bareilly.	- - - -	II.—Q. 2, p. 12. Q. 3, p. 20. Q. 6, p. 45. Q. 7, p. 63. III.—Q. 32, p. 286.
Surgeon E. Mulvany -	Civil Surgeon, Rae Bareli	- - - -	III.—Q. 26, p. 244.
Mr. W. E. Neale, C.S. -	Settlement Officer, Hamirpur.	- - - -	III.—Q. 37, p. 309.
Captain D. G. Pitcher, B.S.C.	Judge, Small Cause Court, Lucknow.	- - - -	II.—Q. 1, p. 4. Q. 4, p. 23. Q. 7, p. 64. III.—Q. 35, p. 298. IV.—Q. 3, p. 367.
Surgeon-Major C. Planck	Sanitary Commissioner -	- - - -	III.—Q. 6, p. 134. Q. 23, p. 228. Q. 26, p. 246. Q. 27, p. 257.
Mr. W. C. Plowden, C.S. -	Commissioner, Meerut -	- - - -	II.—Q. 4, p. 23. Q. 5, p. 26. Q. 7, p. 63. IV.—Q. 1, p. 362. Q. 2, p. 365. Q. 4, p. 375. Q. 5, p. 377. Q. 6, p. 379. Q. 7, p. 385. Q. 10, p. 393.
Surgeon-Major C. Prentis -	Civil Surgeon, Gorakhpur	- - - -	III.—Q. 6, p. 132. Q. 28, p. 272.
Mr. J. Quinn, C.S. - -	Deputy Commissioner, Hardoi.	- - - -	II.—Q. 5, p. 30. Q. 6, p. 48. Q. 7, p. 64. Q. 8, p. 68. Q. 9, p. 72. III.—Q. 5, p. 118. Q. 6, p. 132. Q. 21, p. 221. Q. 30, p. 276. Q. 31, p. 281. Q. 35, p. 299. Q. 36, p. 305.
Colonel J. Reid, B.S.C. -	Commissioner, Lucknow	- - - -	II.—Q. 2, p. 13. Q. 5, p. 29. Q. 6, p. 47.
Mr. M. W. Sandys, C.S.	Collector, Budaon - -	- - - -	II.—Q. 1, p. 2. Q. 2, p. 12. Q. 3, p. 20. Q. 4, p. 23. Q. 5, p. 27. Q. 6, p. 44. Q. 8, p. 68. Q. 9, p. 71. Q. 10, p. 79. Q. 11, p. 80. Q. 12, p. 84. Q. 13, p. 88. Q. 19, p. 211. Q. 27, p. 254. Q. 29, p. 274. Q. 30, p. 276. Q. 37, p. 307. III.—Q. 2, p. 91. Q. 4, p. 111. Q. 6, p. 130. Q. 7, p. 156. Q. 10, p. 169. Q. 11, p. 178. Q. 15, p. 196. Q. 20, p. 217. Q. 24, p. 236. Q. 25, p. 239. Q. 26, p. 244. Q. 32, p. 285. Q. 34, p. 293. Q. 35, p. 297. Q. 36, p. 304. Q. 38, p. 318. Q. 39, p. 327. Q. 40, p. 336. Q. 41, p. 346. Q. 42, p. 349. Q. 43, p. 353. IV.—Q. 8, p. 388. Q. 9, p. 391. Q. 10, p. 394. Q. 11, p. 397.
Mr. A. Sells, C.S. - -	Collector, Muzaffar	- - - -	II.—Q. 2, p. 12. Q. 3, p. 20. Q. 6, p. 43. Q. 7, p. 63. Q. 8, p. 68. Q. 9, p. 71. Q. 12, p. 84. Q. 13, p. 87. IV.—Q. 3, p. 369. Q. 4, p. 375. Q. 7, p. 385. Q. 9, p. 391. Q. 10, p. 394. Q. 11, p. 398.
Mr. J. Sheldon - -	Executive Engineer -	- - - -	III.—Q. 15, p. 196.

Name.	Office.	Experience.	——
		North-west Provinces—*continued.*	
Mr. R. D. Spedding, C.S.	Officiating Collector, Gorakhpur.	- - - -	II.—Q. 5, p. 29. III.—Q. 35, p. 298. IV.—Q. 1, p. 362. Q. 11, p. 297.
Mr. T. Stoker, C.S.	Assistant Collector, Mirzapur.	- - - -	II.—Q. 2, p. 13. Q. 4, p. 23. Q. 9, p. 72. Q. 11, p. 81. III.—Q. 2, p. 91. Q. 4, p. 111. Q. 6, p. 131. Q. 18, p. 207. Q. 24, p. 236. Q. 26, p. 246.
Mr. R. H. Story, C.S.	Deputy Commissioner, Jalaun.	- - - -	III.—Q. 19, p. 211. Q. 22, p. 224. Q. 24, p. 236. Q. 26, p. 244. Q. 30, p. 276. Q. 32, p. 286. Q. 33, p. 289. Q. 34, p. 294. Q. 35, p. 297. Q. 44, p. 355.
Dr. T. M. Sullivan	Civil Surgeon, Basti	- - - -	III.—Q. 6, p. 131.
Captain R. P. Tickell, R.E.	Executive Engineer, Ganges Canal.	- - - -	IV.—Q. 19, p. 438.
Mr. T. B. Tracy, C.S.	Collector, Moradabad	- - - -	II.—Q. 2, p. 12. Q. 3, p. 20. Q. 5, p. 27. Q. 6, p. 44. Q. 7, p. 63. Q. 9, p. 71. Q. 13, p. 88. III.—Q. 5, p. 118. Q. 6, p. 130. Q. 7, p. 156. Q. 10, p. 169. Q. 19, p. 211. Q. 31, p. 280. Q. 34, p. 293. Q. 36, p. 304. Q. 38, p. 319. Q. 39, p. 327.
Vikar Ali Bey	Deputy Commissioner, Saharunpur.	- - - -	III.—Q. 25, p. 239.
Surgeon-Major W. Walker	Inspector General of Prisons.	- - - -	III.—Q. 6, p. 137, 138.
Mr. R. Wall, C.S.	Late Officiating Collector, Banda.	- - - -	III.—Q. 5, p. 118. Q. 25, p. 240. Q. 30, p. 276. IV.—Q. 8, p. 287.
Mr. G. E. Ward, C.S.	Officiating Collector, Jaunpur.	- - - -	IV.—Q. 11, p. 397.
Mr. C. W. P. Watts, C.S.	Collector, Faruckabad	- - - -	IV.—Q. 3, p. 369. Q. 8, p. 387. Q. 11, p. 397.
Mr. H. B. Webster, C.S.	Commissioner, Jhansi	- - - -	II.—Q. 1, p. 4. Q. 2, p. 13. Q. 5, p. 28. Q. 6, p. 45. Q. 7, p. 63. Q. 9, p. 72.
Mr. P. Whalley, C.S.	Officiating Collector, Mainpuri.	- - - -	II.—Q. 3, p. 20. Q. 4, p. 23. Q. 6, p. 45. Q. 7, p. 64. Q. 9, p. 72. Q. 10, p. 78. Q. 11, p. 80. III.—Q. 18, p. 207. Q. 22, p. 224.
Mr. P. J. White	Deputy Commissioner, Jalaun.	- - - -	II.—Q. 6, p. 46.
		Bengal.	
Mr. H. E. Abbott	Manager, Indigo Factory, Muzaffargarh.	- - - -	II.—Q. 2, p. 15. Q. 8, p. 68. III.—Q. 5, p. 120. Q. 33, p. 290. Q. 39, p. 330.
Mr. J. P. Armstrong	Executive Engineer, Irrigation Department.	Agra, 1860-61. Behar, 1874. Threatened scarcity, Mudhoobunnee and North Bhagulpore, 1875-76. Nellore (Madras), 1877-78.	III.—Q. 4, p. 112. Q. 5, p. 120.
Mr. G. N. Barlow, C.S., C.S.I.	Commissioner, Bhagulpore.	Orissa, 1866. Behar, 1873-74, but never in charge of relief operations.	II.—Q. 1, p. 5. Q. 2, p. 14. Q. 3, p. 21. Q. 5, p. 31. Q. 6, p. 49. Q. 7, p. 64. Q. 9, p. 72. Q. 10, p. 78. Q. 12, p. 84. Q. 13, p. 88. III.—Q. 25, p. 240. Q. 32, p. 286. Q. 33, p. 289. Q. 34, p. 294. Q. 35, p. 300. Q. 37, p. 313. Q. 38, p. 320. Q. 39, p. 327. Q. 44, p. 356.
Mr. F. G. Brookes	Executive Engineer, Irrigation Branch, P.W. Department.	Orissa, 1867. Bengal, 1874. Madras, 1877, in charge of portion of East Coast Canal.	II.—Q. 2, p. 15. Q. 6, p. 52. III.—Q. 5, p. 120. Q. 6, p. 142.
Colonel J. Burn, B.S.C.	Manager, Durbhunga Estate.	Bengal (Durbhunga), 1873-75.	II.—Q. 5, p. 31. Q. 9, p. 73. III.—Q. 5, p. 119. Q. 10, p. 170. Q. 13, p. 189. Q. 30, p. 276. Q. 39, p. 328. Q. 44, p. 356.
Colonel Cadell, R.E.	Officiating Chief Engineer, P.W. Department.	- - - -	IV.—Q. 1, p. 362. Q. 2, p. 366. Q. 3, p. 369. Q. 5, p. 377. Q. 7, p. 386, Q. 8, p. 388. Q. 9, p. 391. Q. 10, p. 394. Q. 11, p. 398.
Mr. M. Finucane, C.S.	Settlement Officer, Durbhunga.	Bengal, 1873-74. Scarcity, Durbhunga, 1875-76.	II.—Q. 5, p. 33. Q. 6, p. 50. Q. 7, p. 65. Q. 8, p. 68. Q. 10, p. 78. III.—Q. 2, p. 98. Q. 5, 119. Q. 6, p. 139. Q. 10, p. 170. Q. 31, p. 281. Q. 37, p. 313. Q. 38, p. 320. Q. 39, p. 328. Q. 42, p. 350. Q. 44, p. 356.
Colonel F. Haig, R.E.	Chief Engineer, Irrigation Branch, P.W. Department.	- - - -	IV.—Q. 1, p. 362. Q. 2, p. 366. Q. 3, p. 369. Q. 4, p. 375. Q. 7, p. 386. Q. 8, p. 388. Q. 9, p. 391. Q. 10, p. 394. Q. 13, p. 412. Q. 14, p. 423. Q. 15, p. 427. Q. 16, p. 429. Q. 17, p. 432. Q. 20, p. 442. Q. 21 and 22, p. 446. Q. 23, p. 451. Q. 24, p. 456. Q. 25, p. 461. Q. 26, p. 465. Q. 30, p. 473. Q. 31, p. 475.

Name.	Office.	Experience.	——
		BENGAL—*continued.*	
Babu Hari Mohan Chandra	Deputy Magistrate and Deputy Collector, Dinagepore.	- - - -	II.—Q. 5, p. 36. Q. 7, p. 65. Q. 9, p. 74. III.—Q. 5, p. 121. Q. 6, p. 142. Q. 22, p. 224. Q. 37, p. 314.
Babu Harish Chandra Roy	Superintendent of Estates of Moharanee Surnomoye, Rungpore.	- - - -	II.—Q. 10, p. 79.
Mr. E. R. Henry, C.S. -	Assistant Commissioner, Rajmahal.	Bengal (Durbhunga), 1874.	II.—Q. 2, p. 14. III.—Q. 3, p. 107. Q. 5, p. 121. Q. 6, p. 142. Q. 22, p. 224. Q. 37, p.
Mr. G. J. S. Hodgkinson, C.S.	Officiating Magistrate and Collector of Sarun.	Bengal, 1866 and 1874 -	II.—Q. 1, p. 6. Q. 2, p. 14. Q. 5, p. 32. Q. 6, p. 50. Q. 7, p. 64. Q. 9, p. 73. Q. 10, p. 78. Q. 12, p. 85. III.—Q. 5, p. 119. Q. 25, p. 240. Q. 30, p. 276. Q. 33, p. 289. Q. 34, p. 294. Q. 39, p. 328. Q. 42, p. 349. Q. 44, p. 356.
Mr. A. J. Hughes, C.E. -	Executive Engineer, Irrigation Branch.	Madras, 1877-78 -	III.—Q. 5, p. 120. Q. 8, p. 141.
Moonshee Ishri Pershad Rai Bahadur.	Deputy Collector, Mozufferpore.	Bengal, 1874 - -	III.—Q. 5, p. 119. Q. 6, p. 139.
Mr. T. M. Kirkwood, C.S.	Joint Magistrate, Moorshedabad.	Orissa, 1866, Behar, 1874-75.	II.—Q. 1, p. 7. Q. 2, p. 15. Q. 3, p. 21 Q. 5, p. 35. Q. 6, p. 51. Q. 7, p. 65 Q. 8, p. 68. Q. 9, p. 74. Q. 10, p. 78. Q. 11, p. 81. III.—Q. 2, p. 98. Q. 3, p. 107. Q. 4, p. 112. Q. 5, p. 119. Q. 6, p. 140. Q. 13, p. 189. Q. 14, p. 193. Q. 15, p. 196. Q. 16, p. 200. Q. 17, p. 204. Q. 18, p. 207. Q. 23, p. 232. Q. 24, p. 237. Q. 25, p. 241. Q. 26, p. 247. Q. 27, p. 262. Q. 29, p. 274. Q. 30, p. 277. Q. 32, p. 286. Q. 33, p. 290. Q. 36, p. 305. Q. 38, p. 321. Q. 39, p. 329. Q. 41, p. 347. Q. 43, p. 353. Q. 44, p. 356.
Mr. H. M. Kisch, C.S. -	Officiating under Secretary to Government of Bengal.	Behar, 1874. Madras (Bellary) 1877-78.	III.—Q. 5, p. 120. Q. 6, p. 141. Q. 10, p. 171. Q. 11, p. 178. Q. 31, p. 281. Q. 33, p. 290.
Mr. E. E. Lowis, C.S. -	Commissioner - -	Bengal (Dinajpur), 1873-74.	III.—Q. 6, p. 142. Q. 11, p. 178. Q. 34, p. 295. Q. 39, p. 330.
Mr. A. P. MacDonnell, C.S.	Officiating Magistrate and Deputy Collector.	- - - -	III.—Q. 23, p. 233.
Mr. A. Mackie, C.S. -	Joint Magistrate, Backergunge.	Madras (Nellore), 1877-78.	II.—Q. 2, p. 14. Q. 6, p. 51.
Mr. C. F. Magrath, C.S. -	Officiating Collector of Monghyr.	Bengal, 1873-74 -	II.—Q. 2, p. 14. Q. 3, p. 21. Q. 4, p. 24. Q. 5, p. 32. Q. 6, p. 49. Q. 7, p. 64. Q. 8, p. 68. Q. 9, p. 78. Q. 12, p. 84. Q. 13, p. 88. III.—Q. 2, p. 97. Q. 4, p. 112. Q. 5, p. 119. Q. 6, p. 138. Q. 7, p. 157. Q. 10, p. 170. Q. 14, p. 192. Q. 16, p. 200. Q. 17, p. 203. Q. 18, p. 207. Q. 19, p. 212, Q. 22, p. 224. Q. 33, p. 290. Q. 34, p. 295. Q. 39, p. 330. Q. 42, p. 350.
Mr. C. R. Marindin, C.S. -	Assistant Magistrate and Collector, Shahabad.	- - - -	II.—Q. 4, p. 24. III.—Q. 24, p. 237. Q. 25, p. 241. Q. 35, p. 300. Q. 38, p. 320. Q. 40, p. 339. Q. 43, p. 353.
Captain J. May - -	Executive Engineer -	Bengal, 1873-74 -	III.—Q. 5, p. 119. Q. 10, p. 170. Q. 11, p. 178. Q. 20, p. 217. Q. 21, p. 221.
Mr. C. T. Metcalfe, C.S., C.S.I.	Magistrate and Collector, Durbhunga.	- - - -	II.—Q. 1, p. 6. Q. 2, p. 15. Q. 4, p. 24. Q. 5, p. 35. Q. 9, p. 74. III.—Q. 4, p. 112. Q. 5, p. 119. Q. 6, p. 139. Q. 17, p. 203. Q. 19, p. 212. Q. 21, p. 221. Q. 23, p. 231. Q. 33, p. 289 Q. 35, p. 300. Q. 38, p. 321. Q. 43, p. 353.
Mr. C. J. O'Donnell, C.S.	Sub-Divisional Officer, Sarun.	Behar, 1874 - -	II.—Q. 5, p. 33. III.—Q. 2, p. 97.
Babu Ramani Mohan Chandari, Rai Bahadur.	Zemindar, Rungpore -	Bengal, 1874 - - -	II.—Q. 4, p. 24. Q. 9, p. 74.
Mr. G. Taynbee, C.S. -	Officiating Collector of Patna.	Orissa, 1867-68 - -	II.—Q. 5, p. 32. Q. 6, p. 50. Q. 7, p. 65. Q. 9, p. 73. Q. 10, p. 78. III.—Q. 24, p. 237. Q. 25, p. 240. Q. 29, p. 274. Q. 30, p. 277. Q. 31, p. 281. Q. 32, p. 286. Q. 33, p. 289. Q. 35, p. 300. Q. 37. p. 313. Q. 38, p. 320. Q. 40, p. 339. Q. 44, p. 356.
Mr. Whinfield, C.S. - -	Magistrate and Collector, Burdwan.	Bengal, 1874 - - -	III.—Q. 34, p. 296. Q. 39, p. 330.
Mr. C. F. Worsley, C.S. -	Collector of Mozufferpore	Behar, 1873-74 - -	II.—Q. 1, p. 5. Q. 2, p. 14. Q. 4, p. 24. Q. 5, p. 31. Q. 6, p. 49. Q. 8, p. 68. Q. 12, p. 84. Q. 13, p. 88. III.—Q. 3, p. 107. Q. 4, p. 112. Q. 17, p. 203. Q. 34, p. 294. Q. 38, p. 320. Q. 39, p. 328. Q. 40, p. 337. Q. 42, p. 349. Q. 44, p. 356.

Name.	Office.	Experience.	——
		CENTRAL PROVINCES.	
Mr. G. J. Nicholls, C.S. -	Assistant Commissioner -	Central Provinces, 1868–69. Bengal, 1874–75.	II.—Q 2, p. 15. III.—Q. 4, p. 112. Q. 6, p. 142. Q. 17, p. 205. Q. 22, p. 225. Q. 25, p. 242. Q. 33, p. 291. Q. 35, p. 301. Q. 44, p. 357.
		BOMBAY.	
Colonel W. C. Anderson, Bo. S.C.	Commissioner of Survey -	- - - -	II.—Q. 4, p. 24. Q. 5, p. 37. Q. 7, p. 66. III.—Q. 2, p. 103. Q. 3, p. 108. Q. 4, p. 113. Q. 5, p. 122. Q. 6, p. 145. Q. 7, p. 159. Q. 8, p. 166. Q. 9, p. 167. Q. 11, p. 186. Q. 13, p. 190. Q. 14, p. 194. Q. 15, p. 198. Q. 18, p. 208. Q. 19, p. 213. Q. 21, p. 222. Q. 22, p. 225. Q. 23, p. 235. Q. 25, p. 242. Q. 27, p. 267. Q. 31, p. 282.
Mr. Appajee Raojee -	Mamlutdar of Pandharpur	- - -	III.—Q. 5, p. 124.
Mr. L. Ashburner, C.S., C.S.I.	Member of Council -	- - - -	III.—Q. 31, p. 283.
Mr. T. Bosanquet, C.S.	Collector, Belgaum -	- - - -	II.—Q. 3, p. 22. Q. 8, p. 69. Q. 9, p. 75, Q. 10, p. 79. Q. 11, p. 81. Q. 12, p. 85. Q. 13, p. 89. III.—Q. 2, p. 103. Q. 3, p. 108, Q. 4, p. 113. Q. 5, p. 123. Q. 6, p. 146. Q. 7, p. 159. Q. 8, p. 166. Q. 9, p. 167. Q. 14, p. 194. Q. 18, p. 209. Q. 19, p. 214. Q. 22, p. 225. Q. 31, p. 282. Q. 32, p. 287.
Mr. C. T. Burke -	Executive Engineer -	- - - -	III.—Q. 10, p. 172.
Mr. R. E. Candy, C.S. -	Assistant Collector of Ahmednagar.	- - - -	III.—Q. 5, p. 124. Q. 6, p. 149. Q. 11, p. 179.
Mr. Charles, C.S. - -	Assistant Collector, Dharwar.	- - - -	II.—Q. 1, p. 7. Q. 2, p. 16. Q. 6, p. 53. Q. 7, p. 65. Q. 8, p. 69. Q. 9, p. 75. Q. 10, p. 79. Q. 13, p. 88. III.—Q. 2, p. 103. Q. 3, p. 108. Q. 4, p. 113. Q. 5, p. 122. Q. 6, p. 144. Q. 9, p. 167. Q. 13, p. 190. Q. 15, p. 197. Q. 19, p. 213. Q. 20, p. 218. Q. 22, p. 225. Q. 25, p. 241. Q. 39, p. 332.
Mr. W. Clerke - -	Executive Engineer for Irrigation.	- - - -	III.—Q. 6, p. 151. Q. 11, p. 180.
Mr. H. Erskine, C.S. -	Commissioner, Northern Division.	- - - -	IV.—Q. 24, p. 457. Q. 25, p. 461.
The Rev. S. P. Fairbank -	American Mission, Ahmednagar.	- - - -	III.—Q. 6, p. 150.
Mr. A. R. Ffórde - -	Assistant Superintendent, Revenue Survey.	- - - -	III.—Q. 6, p. 150.
Mr. J. Gibbs, C.S.I. -	Member of Council -	- - - -	III.—Q. 2, p. 103. Q. 36, p. 306.
Mr. Hamilton, C.S. - -	Assistant Collector, Ahmednagar.	- - - -	II.—Q. 1, p. 8. Q. 2, p. 16. Q. 3, p. 22. Q. 9, p. 75. Q. 11, p. 81. III.—Q. 2, p. 103. Q. 4, p. 113. Q. 6, p. 144. Q. 7, p. 158. Q. 9, p. 167. Q. 10, p. 172. Q. 11, p. 186. Q. 13, p. 190, Q. 18, p. 208. Q. 19, p. 213. Q. 22, p. 225. Q. 44, p. 358.
The Rev. C. Harding -	Congregational American Mission.	- - - -	III.—Q. 5, p. 124. Q. 6, p. 149. Q. 8, p. 166.
Mr. I. H. E. M. Hart, M.I.C.E.	Acting Chief Engineer for Irrigation.	- - - -	II.—Q. 6. p. 53. III.—Q. 2, p. 102. Q. 5, p. 121. Q. 7, p. 157. Q. 8, p. 165. Q. 9, p. 167. Q. 10, p. 171. Q. 11, p. 179. Q. 12, p. 186. Q. 20, p. 218. Q. 21, p. 221. IV.—Q. 2, p. 366. Q. 3, p. 370. Q. 4, p. 376.
Surgeon Major Hewlett, C.I.E.	Sanitary Commissioner -	- - - -	II.—Q. 3, p. 21. Q. 4, p. 24. Q. 5, p. 36. Q. 6, p. 52. Q. 7, p. 65. Q. 8, p. 69. III.—Q. 2, p. 102. Q. 3, p. 108. Q. 4, p. 112. Q. 6, p. 143. Q. 9, p. 167. Q. 10, p. 171. Q. 12, p. 185. Q. 13, p. 190. Q. 14, p. 193. Q. 15, p. 197. Q. 23, p. 234. Q. 24, p. 237. Q. 25, p. 241. Q. 26, p. 248. Q. 27, p. 266. Q. 29, p. 275. Q. 31, p. 282. Q. 36, p. 305. Q. 38, p. 321. Q. 40, p. 340.
Mr. W. C. Hughes -	Assistant Chief Engineer for Irrigation.	- - - -	IV.—Q. 1, p. 363. Q. 8, p. 388. Q. 12, p. 407. Q. 13, p. 413. Q. 14, p. 423. Q. 16, p. 429. Q. 19, p. 439. Q. 20, p. 442. Q. 21 and 22, p. 446. Q. 23, p. 452. Q. 24, p. 458. Q. 25, p. 461. Q. 26, p. 465. Q. 29, p. 473. Q. 31, p. 475.
Colonel Jenkin Jones -	Superintending Engineer, Central Division.	- - - -	II.—Q. 6, p. 53. III.—Q. 4, p. 112. Q. 5, p. 121. Q. 6, p. 143. Q. 7, p. 157. Q. 8, p. 165. Q. 9, p. 167. Q. 10, p. 171. Q. 11, p. 186. Q. 17, p. 204. Q. 18, p. 208.

Name.	Office.	Experience.	——
		BOMBAY—*continued.*	
Mr. A. Keyser, C.S. -	Assistant Collector, Poona	- - - -	III.—Q. 3, p. 109. Q. 4, p. 113. Q. 7, p. 159. Q. 31, p. 282.
Mr. J. G. Moore, C.S. -	Collector, Satara - -	- - - -	II.—Q. 1, p. 8. Q. 2, p. 16. Q. 4, p. 24. Q. 5, p. 37. Q. 6, p. 54. Q. 9, p. 75. Q. 10, p. 79. Q. 11, p. 82. Q. 12, p. 86. Q. 13, p. 89. III.—Q. 2, p. 103. Q. 4, p. 113. Q. 5, p. 122. Q. 6, p. 144. Q. 7, p. 158. Q. 8, p. 166. Q. 9, p. 167. Q. 11, p. 186. Q. 14, p. 194. Q. 15, p. 198. Q. 18, p. 208. Q. 19, p. 213. Q. 20, p. 218. Q. 21, p. 222. Q. 31, p. 282. Q. 38, p. 323. Q. 39, p. 332. Q. 40, p. 341. Q. 41, p. 347. Q. 44, p. 358. IV.—Q. 11, p. 398.
Mr. G. Norman, C.S. -	Collector, Poona - -	- - - -	II.—Q. 1, p. 8. Q. 2, p. 16. Q. 3, p. 21. Q. 6, p. 54. Q. 7, p. 66. Q. 8, p. 69. Q. 9, p. 75. Q. 10, p. 79. Q. 11, p. 81. Q. 12, p. 85. Q. 13, p. 89. III.—Q. 2, p. 102. Q. 3, p. 108. Q. 4, p. 112. Q. 5, p. 121. Q. 7, p. 158. Q. 8, p. 165. Q. 9, p. 167. Q. 11, p. 179. Q. 13, p. 190. Q. 14, p. 193. Q. 15, p. 197. Q. 16, p. 201. Q. 18, p. 208. Q. 19, p. 212. Q. 20, p. 218. Q. 21, p. 221. Q. 22, p. 225. Q. 23, p. 234. Q. 24, p. 237. Q. 29, p. 275. Q. 32, p. 287. Q. 33, p. 291. Q. 35, p. 301. Q. 36, p. 305. Q. 37, p. 314. Q. 38, p. 322. Q. 40, p. 340. Q. 43, p. 354.
Mr. E. H. Percival, C.S. -	Collector, Sholapur -	- -	II.—Q. 6, p. 53. Q. 9, p. 75. III.—Q. 2, p. 103. Q. 3, p. 108. Q. 4, p. 113. Q. 6, p. 144. Q. 7, p. 158. Q. 9, p. 167. Q. 13, p. 190. Q. 14, p. 194. Q. 15, p. 198. Q. 18, p. 208. Q. 19, p. 213. Q. 20, p. 218. Q. 32, p. 287. Q. 33, p. 291. Q. 35, p. 301. Q. 40, p. 341. Q. 45, p. 359.
Mr. W. H. Propert, C.S. -	Collector, Khandesh -	- - - -	II.—Q. 1, p. 8. Q. 2, p. 16. Q. 3, p. 21. Q. 4, p. 24. Q. 5, p. 36. Q. 6, p. 54. Q. 9, p. 75. Q. 10, p. 79. Q. 11, p. 81. Q. 12, p. 85. Q. 13, p. 88. III.—Q. 2, p. 102. Q. 3, p. 108. Q. 4, p. 112. Q. 5, p. 121. Q. 6, p. 144. Q. 7, p. 158. Q. 8, p. 165. Q. 9, p. 167. Q. 10, p. 171. Q. 13, p. 190. Q. 14, p. 193. Q. 15, p. 197. Q. 20, p. 218. Q. 21, p. 221. Q. 22, p. 225. Q. 34, p. 296. Q. 39, p. 331. Q. 44, p. 358. IV.—Q. 6, p. 379. Q. 11, p. 398. Q. 12, p. 407. Q. 13, p. 414. Q. 15, p. 427. Q. 17, p. 432. Q. 19, p. 439. Q. 21 and 22, p. 447. Q. 24, p. 458. Q. 25, p. 462. Q. 26, p. 465.
Mr. E. P. Robertson, C.S.	Commissioner, Central Division.	- - - -	II.—Q. 1, p. 8. Q. 2, p. 16. Q. 4, p. 24. Q. 5, p. 37. Q. 6, p. 54. Q. 7, p. 66. Q. 8, p. 69. Q. 9, p. 75. Q. 10, p. 79. Q. 12, p. 86. Q. 13, p. 89. III.—Q. 2, p. 103. Q. 3, p. 108. Q. 4, p. 113. Q. 5, p. 122. Q. 6, p. 145. Q. 7, p. 159. Q. 8, p. 166. Q. 9, p. 167. Q. 11, p. 179. Q. 12, p. 187. Q. 13, p. 190. Q. 14, p. 194. Q. 15, p. 198. Q. 16, p. 201. Q. 18, p. 209. Q. 19, p. 213. Q. 20, p. 219. Q. 22, p. 225.
Mr. W. Ramsay, C.S. -	Collector, Nasik - -	- - - -	II.—Q. 2, p. 16. Q. 7, p. 65. Q. 11, p. 81. Q. 12, p. 85. III.—Q. 35, p. 301. Q. 37, p. 315. Q. 38, p. 323. Q. 40, p. 342. IV.- Q. 25, p. 462. Q. 29, p. 473.
Mr. A. H. Spry, C.S.	Collector, Kaladgi -	- - - -	II.—Q. 1, p. 7. Q. 2, p. 16. Q. 3, p. 21. Q. 4, p. 24. Q. 5, p. 36 and 37. Q. 6, p. 53. Q. 7, p. 65. Q. 8, p. 69. Q. 9, p. 75. Q. 10, p. 79. Q. 11, p. 81. Q. 12, p. 85. Q. 13, p. 88. III.—Q. 2, p. 102. Q. 3, p. 108. Q. 4, p. 112. Q. 5, p. 122. Q. 6, p. 144. Q. 7, p. 158. Q. 8, p. 165. Q. 9, p. 167. Q. 10, p. 172. Q. 11, p. 179. Q. 12, p. 186. Q. 13, p. 190. Q. 14, p. 193. Q. 15, p. 197. Q. 16, p. 201. Q. 17, p. 205. Q. 18, p. 208. Q. 19, p. 212. Q. 20, p. 218. Q. 21, p. 222. Q. 22, p. 225. Q. 23, p. 234. Q. 24, p. 238.

Name.	Office.	Experience.	——
		BOMBAY—*continued.*	
Mr. A. H. Spry, C.S.—*cont.*	Collector, Kaladgi - -	- - - -	Q. 25, p. 241. Q. 27, p. 266. Q. 28, p. 273. Q. 29, p. 275. Q. 31, p. 282. Q. 32, p. 287. Q. 33, p. 291. Q. 34, p. 297. Q. 35, p. 301. Q. 36, p. 305. Q. 37, p. 314. Q. 38, p. 322. Q. 39, p. 331. Q. 40, p. 341. Q. 41, p. 347. Q. 42, p. 350. Q. 43, p. 354. Q. 45, p. 359.
Mr. W. P. Symonds -	Assistant Collector, Poona.	- - -	III.—Q. 24, p. 238. Q. 31, p. 282.
Sir R. Temple, G.C.S.I. -	Lieutenant Governor -	- - - -	IV.—Q. 1, p. 363.
Lieutenant R. de Villamil, R.E.	Assistant Engineer -	- - - -	III.—Q. 2, p. 103. Q. 3, p. 108. Q. 4, p. 113. Q. 6, p. 149. Q. 7, p. 159.
Mr. J. E Whiting - -	Executive Engineer, Poona.	- - - -	III.—Q. 5, p. 124. Q. 11, p. 180. Q. 20, p. 219.
Major-General St. Clair Wilkins, R.E. -	Superintending Engineer, Southern Division.	- - - -	II.—Q. 7, p. 63. III.—Q. 2, p. 102. Q. 3, p. 108. Q. 5, p. 121. Q. 6, p. 144. Q. 7, p. 157. Q. 8, p. 165. Q. 9, p. 167. Q. 10, p. 171. Q. 11, p. 179. Q. 12, p. 186. Q. 13, p. 190. Q. 14, p. 193. Q. 15, p. 197. Q. 16, p. 201. Q. 17, p. 204. Q. 18, p. 208. Q. 19, p. 212. Q. 20, p. 218. Q. 21, p. 221. Q. 22, p. 225. Q. 34, p. 296. Q. 41, p. 347. Q. 42, p. 350. IV.—Q. 2, p. 366. Q. 3, p. 370.
Mr A. Wingate, C.S.	Assistant Secretary to Famine Commission.	- - - -	II.—Q. 6, p. 55. III.—Q. 5, p. 124. Q. 6, p. 151. Q. 31, p. 282. Q. 35, p. 301.
		MADRAS.	
Abdul Karlem Khan -	Sub-Divisional Office, Public Works Department, North Arcot.	- - - -	III.—Q. 5, p 128.
Mr. W. Austin - -	Acting Sub-Collector, North Arcot.	- - - -	II.—Q. 9, p. 76. Q. 10, p. 79. Q. 12, p. 86. III.—Q. 2, p. 105. Q. 4, p. 114. Q. 31, p. 284. Q. 38, p. 325. Q. 43, p. 354.
Captain A. Awdry, R.E. -	Executive Engineer, Salem.	- - - -	III.—Q. 4, p. 115. Q. 7, p. 163. Q. 10, p. 174. Q. 11, p. 182. Q. 20, p. 220. Q. 21, p 222. Q. 25, p. 243. Q. 41, p. 348. Q. 42, p. 352. IV.—Q. 5, p. 378. Q. 6, p. 384.
Major C. D. Baynes, M.S.C.	Government Agent, Chepauk.	Madras (Salem), 1877–78	II.—Q. 2, p. 18. Q. 6, p. 57. Q. 10, p. 79. III.—Q. 7, p. 161. Q. 12, p. 187. Q. 13, p. 191. Q. 14, p. 194. Q. 16, p. 201. Q 17, p. 205. Q. 18, p. 209. Q. 19, p. 215. Q. 25, p. 243. Q. 26, p. 250. Q. 27, p. 268. Q. 29, p. 275. Q. 33 p. 292.
Captain R. R. E. Brockman, R.E.	Executive Engineer, Tanjore.	- - - -	IV.—Q. 3, p. 374. Q. 18, p. 434.
The Right Reverend Bishop Caldwell.	- - - -	- - - -	III.—Q. 31, p. 284.
Major S. C. Clarke, R.E. -	Executive Engineer, Buckingham Canal Works.	- - - -	III.—Q. 6, p. 154.
Mr. J. H. Cook - -	Special Assistant -	Madras (Coimbatore), 1877–78.	II.—Q. 1, p. 10. Q. 8, p. 70. Q. 39, p. 335.
Mr. W. Colton - -	Executive Engineer -	- - - -	III.—Q. 5, p. 127.
Mr. C. S. Crole, C.S. -	Acting Collector of Kurnool.	Madras (Nellore), 1877–78	III.—Q. 2, p 105. Q. 3, p. 109. Q. 4, p. 114. Q. 5, p. 126. Q. 7, p. 161. Q. 12, p. 187. Q. 24, p. 238. Q. 25, p. 242. Q. 26, p 249. Q. 29, p. 275. Q. 37, p. 316 Q. 43, p. 354. Q. 45, p. 360. IV.—Q. 13, p. 416. Q. 15, p. 428. Q. 26, p. 468.
Mr. G. W. Fawcett -	Acting Head Assistant Collector of Kurnool.	- - - -	III.—Q. 3, p. 110. Q. 4, p. 115. Q. 5, p. 126. Q. 7, p. 160. Q. 39, p. 334.
Colonel E. A. Foord, R.E.	Chief Engineer, Public Works Department.	- - - -	IV.—Q. 3, p. 373. Q. 4, p. 376. Q. 5, p. 378. Q. 7, p. 386. Q. 8, p. 389. Q 9, p. 392. Q. 11, p. 398.
Mr. W. S. Foster, C.S. -	Collector of Godavari District.	- - - -	IV.—Q. 13, p. 418. Q. 14, p. 425. Q. 15, p. 428. Q. 17, p. 433. Q. 23, p. 454. Q. 27, p. 470.
Mr. Gillon - - -	- - - -	- - - -	III.—Q. 22, p. 226. Q. 38, p. 325.
Surgeon H. A. C. Gray, M.B.	- - - -	Madras (Chingleput and Kurnool), 1877–78.	III.—Q. 6, p. 154. Q. 23, p. 235. Q. 26, p. 249. Q. 27, p. 267.
Mr. J. Grose - -	Collector of Nellore -	- - - -	II.—Q. 8, p. 69. Q. 9, p. 76. Q. 10, p 79. Q. 11, p. 82. Q. 12, p. 86. III.—Q. 2, p. 104. Q. 3, p. 109. Q. 4, p. 114. Q. 5, p. 126. Q. 9, p. 168. Q. 10, p. 173. Q. 12, p. 187. Q. 13, p. 191. Q. 19, p. 215. Q. 20, p. 219. Q. 26, p. 249. Q. 38, p. 324. Q. 39, p. 333. Q. 40, p. 345. Q. 41, p. 348.

Name.	Office.	Experience.	
		MADRAS—*continued.*	
Honourable G. N. Gujpatirao.	- - - -	Madras (Vizagapatam), 1877–78.	III.—Q. 18, p. 210.
Lieutenant-Colonel J. O. Hasted, R.E.	Superintending Engineer, Kistna.	- - - -	II.—Q. 1, p. 10. Q. 7, p. 66. III.—Q. 5, p. 127. Q. 12, p. 188. Q. 20, p. 220.
Mr. Hayes -	- - - -	Madras (Nellore, East Coast Canal), 1876–78.	III.—Q. 5, p. 128. Q. 11, p. 182.
Lieutenant C. B. Henderson, R.E.	Assistant Engineer, Public Works Department.	- - - -	III.—Q. 5, p. 128. Q. 35, p. 303.
Mr. D. K. Homan -	Famine Relief Officer, Coimbatore District.	Madras (Coimbatore), 1877–78.	III.—Q. 3, p. 110.
Mr. J. G. Horsfall - -	Acting Collector, Kistna -	- - - -	II.—Q. 1, p. 9. Q. 2, p. 17. Q. 4, p. 21. Q. 5, p. 40. Q. 6, p. 56. Q. 9, p. 76. Q. 11, p. 82. Q. 12, p. 86. Q. 13, p. 89. III.—Q. 4, p. 113. Q. 7, p. 160. Q. 13, p. 191. Q. 18, p. 209. Q. 31, p. 283. Q. 32, p. 287. Q. 36, p. 306. Q. 37, p. 317. Q. 39, p. 333. Q. 41, p. 348 Q. 42, p. 351. Q. 45, p. 360.
Mr. T. M. Horsfall -	Assistant Collector of Madura.	Madras (Madura), 1876–77.	II.—Q. 8, p. 69.
Lieutenant-Colonel J. Hunter, R.E.	Executive Engineer, Bellary.	- - - -	IV.—Q. 3, p. 374. Q. 6, p. 384. Q. 8, p. 390. Q. 9, p. 392. Q. 27, p. 470.
Mr. Hurry Row - -	- - - -	- - - -	III.—Q. 6, p. 154. Q. 33, p. 292. Q. 39, p. 335.
Mr. A. M. Jones -	Deputy Collector and Magistrate, Chingleput.	- - - -	II.—Q. 10, p. 79. III.—Q. 2, p. 105. Q. 3, p. 110. Q. 5, p. 126. Q. 10, p. 173.
Mr. Knox - -	- - - -	- - - -	II.—Q. 4, p. 24. Q. 8, p. 69. III.—Q. 2, p. 105. Q. 3, p. 110. Q. 4, p. 115. Q. 9, p. 168. Q. 15, p. 199.
Surgeon John Lancaster -	Acting Zillah Surgeon of Salem.	- - - -	III.—Q. 28, p. 273.
Mr. L. Lee Warner, C.S. -	Principal Assistant Collector, Vizagapatam.	Madras (Ramnad and Vizagapatam), 1877–78.	II.—Q. 8, p. 69. Q. 10, p. 79. Q. 12, p. 86. III.—Q. 4, p. 115. Q. 38, p. 325.
Mr. C. T. Longley, C.S. -	Collector of Salem -	- - - -	II.—Q. 1, p. 9. Q. 2, p. 18. Q. 5, p. 38. III.—Q. 2, p. 104. Q. 3, p. 109. Q. 6, p. 151. Q. 7, p. 160. Q. 10, p. 173. Q. 11, p. 180. Q. 12, p. 187. Q. 13, p. 191. Q. 14, p. 194. Q. 15, p. 198. Q. 18, p. 209. Q. 19, p. 214. Q. 20, p. 219. Q. 21, p. 222. Q. 22, p. 226. Q. 24, p. 238. Q. 25, p. 242. Q. 31, p. 283. Q. 33, p. 291. Q. 35, p. 303. Q. 36, p. 306. Q. 37, p. 315. Q. 38, p. 323. Q. 39, p. 332. Q. 40, p. 342. Q. 41, p. 348. Q. 42, p. 351. Q. 43, p. 354. Q. 45, p. 359. IV.—Q. 12, p. 408. Q. 13, p. 415. Q. 19, p. 440. Q. 25, p. 463.
Mr. J. Macartney - -	Agent to Raja of Sundoor	- - - -	II.—Q. 7, p. 66. Q. 8, p. 70. III.—Q. 6, p. 154.
Surgeon McNally, M.D. -	Sanitary Inspector - -	Madras (Cuddapa), 1877.	III.—Q. 12, p. 188. Q. 14, p. 195. Q. 26, p. 250.
Mr. G. McWatters - -	Sub-Collector of Coimbatore.	- - - -	IV.—Q. 6, p. 383. Q. 12, p. 408. Q. 13, p. 418.
Captain G. Maitland -	Executive Engineer -	- - - -	III.—Q. 6, p. 154.
Mr. C. W. W. Martin, C.S.	Acting Sub-Collector of Madura.	- - - -	II.—Q. 1, p. 9. Q. 4, p. 21 Q. 5, p. 40. Q. 7, p. 66. Q. 10, p. 79. III.—Q. 2, p. 104, 105. Q. 3, p. 109. Q. 4, p. 114. Q. 37, p. 317. Q. 38, p. 325. Q. 39, p. 333.
Major H. R. Mead, R.E. -	Superintending Engineer	- - - -	II.—Q. 7, p. 66. III.—Q. 5, p. 127. Q. 11, p. 182. IV.—Q. 3, p. 373. Q. 4, p. 376. Q. 5, p. 378. Q. 6, p. 384. Q. 7, p. 386. Q. 8, p. 390. Q. 9, p. 392. Q. 11, p. 400.
Major R. Montgomerie, R.E.	Acting Deputy Chief Engineer for Irrigation.	- - - -	IV.—Q. 2, p. 366. Q. 3, p. 372. Q. 4, p. 376. Q. 5, p. 378. Q. 6, p. 381. Q. 7, p. 386. Q. 8, p. 389. Q. 10, p. 395. Q. 11, p. 398. Q. 14, p. 425. Q. 15, p. 427. Q. 21 and 22, p. 448. Q. 27, p. 470.
Mr. Lewis Moore, C.S. -	Acting Head Assistant Collector, Trichinopoly.	Madras (Trichinopoly), 1877.	III.—Q. 39, p. 334.
Captain R. F. Morris, R.E.	Executive Engineer, Trichinopoly Division.	- - - -	III.—Q. 7, p. 163. Q. 10, p. 174. Q. 18, p. 209. Q. 19, p. 216.
Lieutenant-Colonel J. Mullins, R.E.	Chief Engineer for Irrigation.	Madras (Coimbatore), 1877–78.	IV. Q. 1, p. 364. Q. 2, p. 366. Q. 3, p. 472. Q. 4, p. 376. Q. 5, p. 377. Q. 6, p. 381. Q. 7, p. 386. Q. 8, p. 389. Q. 9, p. 391. Q. 10, p. 395. Q. 11, p. 398. Q. 14, p. 424, Q. 15, p. 427. Q. 16, p. 429. Q. 17, p. 433. Q. 18, p. 434. Q. 19, p. 440. Q. 20, p. 442. Q. 21 and 22, p. 447. Q. 23, p. 453. Q. 24, p. 459. Q. 25, p. 463. Q. 26, p. 466. Q. 27, p. 470. Q. 29, p. 473. Q. 30, p. 473. Q. 31, p. 477.

Name.	Office.	Experience.	——
		MADRAS—*continued.*	
The Rev. G. O. Newport -	London Missionary Society.	Travancore, 1869–70. Madras (Salem), 1877–78.	II.—Q. 9, p. 76. III.—Q. 7, p. 164. Q. 33, p. 292.
Mr. K. F. Nordmann -	District Engineer, Kurnool.	- - - -	III.—Q. 6, p. 153.
Mr W. B. Oldham, C.S. -	Collector and Special Famine Officer, Bellary.	Orissa, 1866–68. Chumparun, 1869. Behar, 1874. Madras, 1876–78.	II.—Q. 7, p. 66. Q. 8, p. 70. III.—Q. 5, p. 126. Q. 6, p. 153. Q. 7, p. 163. Q. 8, p. 166. Q. 10, p. 173. Q. 11, p. 181. Q. 15, p. 199. Q. 17, p. 206. Q. 18, p. 209. Q. 19, p. 215. Q. 21, p. 222. Q. 25, p. 242. Q. 31, p. 284. Q. 32, p. 288. Q. 38, p. 325. Q. 39, p. 335. Q. 41, p. 348. Q. 42, p. 352. Q. 45, p. 361.
Mr. J. O'Shaughnessy -	District Engineer, Nellore.	- - - -	IV.—Q. 1, p. 364. Q. 3, p. 373. Q. 6, p. 384. Q. 7, p. 386. Q. 8, p. 390. Q. 9, p. 392. Q. 10, p. 395. Q. 11, p. 399.
Mr. T. Pattabhiram Pillay	Huzur Sheristadar, Trichinopoly.	- - - -	III.—Q. 32, p. 388.
Mr. J. B. Pennington -	Collector of Tinnevelly -	Madras (Tinnevelly), 1877–78.	II.—Q. 11, p. 82.
Major Pennycuick -	Executive Engineer, Salem.	Madras, 1877 - -	IV.—Q. 5, p. 378. Q. 6, p. 384.
Lieutenant-Colonel H. L. Prendergast, R.E.	Superintending Engineer	Madras, 1877 - -	III.—Q. 2, p. 105. Q. 3, p. 110. Q. 4, p. 115. Q. 5, p. 127. Q. 7, p. 163. Q. 10, p. 173. Q. 11, p. 182. Q. 21, p. 222. IV.—Q. 3, p. 374. Q. 4, p. 376. Q. 5, p. 378. Q. 6, p. 384. Q. 7, p. 386. Q. 8, p. 390. Q. 9, p. 392. Q. 10, p. 395. Q. 11, p. 400.
Mr. J. F. Price, C.S. -	Collector of Chingleput -	- - - -	II.—Q. 1, p. 8. Q. 2, p. 17. Q. 3, p. 22. Q. 5, p. 40. Q. 6, p. 56. Q. 7, p. 66. Q. 12, p. 86. Q. 13, p. 89. III.—Q. 2, p. 104. Q. 3, p. 109. Q. 4, p. 114. Q. 5, p. 125. Q. 6, p. 152. Q. 7, p. 161. Q. 8, p. 166. Q. 9, p. 168. Q. 10, p. 172. Q. 15, p. 198. Q. 18, p. 209. Q. 19, p. 215. Q. 20, p. 219. Q. 21, p. 222. Q. 22, p. 226. Q. 23, p. 235. Q. 24, p. 238. Q. 25, p. 242. Q. 31, p. 283. Q. 32, p. 287. Q. 35, p. 303. Q. 36, p. 306. Q. 38, p. 324. Q. 39, p. 332. Q. 40, p. 343. Q. 41, p. 348. Q. 42, p. 351. Q. 45, p. 360. IV.—Q. 6, p. 381. Q. 11, p. 399. Q. 26, p. 467.
Sir. W. Robinson, K.C.S.I.	Senior Member of Council, Madras.	- - - -	II.—Q. 1, p. 8. Q. 12, p. 86. III.—Q. 2, p. 104. Q. 19, p. 214. Q. 35, p. 302. Q. 36, p. 306. Q. 38, p. 323. Q. 39, p. 332. Q. 40, p. 342. Q. 41, p. 348. Q. 43, p. 354.
Mr. H. T. Ross - -	Assistant Collector, Bellary.	- - - -	III.—Q. 7, p. 161. Q. 11, p. 180. Q. 20, p. 220. Q. 39, p. 334.
Major G. C. Ross, 16th Bengal Cavalry.	Madras (Coimbatore), 1877–78.	- - - -	III.—Q. 3, p. 153. Q. 10, p. 173. Q. 11, p. 181.
Mr. J. W. Rundall, M.I.C.E.	Acting Superintending Engineer.	- - - -	III.—Q. 2, p. 105. Q. 3, p. 110. Q. 5, p. 127. Q. 6, p. 154. Q. 21, p. 222. IV.—Q. 3, p. 374. Q. 10, p. 396.
Mr. A. S. Russell - -	Assistant Engineer -	Madras, (Nellore and Coimbatore), 1876–77	III.—Q. 5, p. 127. Q. 10, p. 174.
Mr. Ruthnasabapathy Pillay.	Assistant Engineer, North Arcot.	- - - -	III.—Q. 4, p. 115. Q. 7, p. 164.
Mr. Seetharamiah - -	- - - -	- - - -	II.—Q. 2, p. 18. Q. 4, p. 25.
Mr. Sewell - -	- - - -	- - - -	II.—Q. 3, p. 22. Q. 6, p. 56. Q. 10, p. 79. Q. 11, p. 82.
Mr. C. W. Simson -	Chairman, Chamber of Commerce, Coconada.	- - - -	IV.—Q. 3, p. 374.
Mr. P. Soobien - -	Deputy Collector -	- - - -	II.—Q. 2, p. 18. Q. 9, p. 76. III.—Q. 32, p. 288. Q 37, p. 317.
Serjeant C. Stewart -	Supervisor, P. W. Dept. -	- - - -	III.—Q. 6, p. 154.
Mr. H. J. Stokes, C.S. -	Acting Collector of Madura.	- - - -	II.—Q. 11, p. 83. III.—Q. 22, p. 226. Q. 35, p. 303. Q. 37, p. 316.
Mr. H. E. Sullivan, C.S. -	Acting First Member, Board of Revenue, Member of Famine Commission.	- - - -	IV.—Q. 6, p. 379. Q. 12, p. 408. Q. 13, p. 414. Q. 15, p. 427. Q. 18, p. 434, Q. 21 and 22, p. 447. Q. 23, p. 453 Q. 24, p. 458. Q. 25, p. 462. Q. 26, p. 466. Q. 27, p. 470. Q. 28, p. 471.
Mr H. S. Thomas, C.S. -	Acting Second Member, Board of Revenue.	- - - -	IV.—Q. 2, p. 366. Q. 3, p. 371. Q. 14, p. 424.
Major Ross Thompson, R.E.	District Engineer, Presidency Division.	- - - -	III.—Q. 2, p. 105. Q. 3, p. 110. Q. 6, p. 153. Q. 8, p. 166. Q. 10, p. 174. Q. 11, p. 181. Q. 20, p. 220. Q. 21, p. 222.
Mr. J. Traill - -	Assistant Engineer, Cuddapa.	Madras (Cuddapa), 1877–78.	IV.—Q. 1, p. 364. Q. 2, p. 367. Q. 3, p. 374. Q. 5, p. 378. Q. 7, p. 387. Q. 9, p. 392. Q. 11, p. 400.

Name.	Office.	Experience.	——
		MADRAS—*continued.*	
Mr. C. H. Travers -	Divisional Relief Officer, Chingleput District.	Madras (Cuddapa), 1877–78.	III.—Q. 11, p. 181.
Mr. E. Turner, C.S. -	Special Assistant to Collector and Magistrate, Madura.	- - - -	IV.—Q. 6, p. 282. Q. 24, p. 459. Q. 27, p. 470.
Major H. M. Vibart, R.E.	Executive Engineer, Trichinopoly.	- - - -	IV.—Q. 3, p. 374. Q. 6, p. 384. Q. 8, p. 390. Q. 9, p. 392. Q. 11, p. 400. Q. 12, p. 409. Q. 15, p. 428. Q. 27, p. 470.
Mr. G. T. Walch -	Acting Superintendent Engineer.	- - - -	IV.—Q. 8, p. 389. Q. 9, p. 392.
Mr. A. McC. Webster, C.S.	Collector of Coimbatore -	- - - -	II.—Q. 1, p. 9. Q. 2, p. 17. Q. 3, p. 22. Q. 7, p. 66. Q. 9, p. 76. Q. 11, p. 82. Q. 13, p. 89. III.—Q. 4, p. 114. Q. 5, p. 125. Q. 7, p. 161. Q. 15, p. 198. Q. 18, p. 209. Q. 20, p. 219. Q. 21, p. 222. Q. 33, p. 292. Q. 35, p. 303. Q. 39, p. 332. Q. 41, p. 348. Q. 43, p. 354. Q. 45, p. 360. IV.—Q. 6.
Mr. A. Weeks, B.C.S. -	- - - -	Maubhum, 1866. Behar, 1874. Madras (Cuddapa and Kurnool), 1877–78.	II.—Q. 12, p. 87. Q. 13, p. 89. III.—Q. 6, p. 152. Q. 11, p. 181. Q. 21, p. 222. Q. 39, p. 334. Q. 45, p. 361.
Mr. W. S. Whiteside, C.S.	Collector, North Arcot -	- - - -	II.—Q. 2, p. 17. Q. 3, p. 22. Q. 4, p. 24. Q. 5, p. 38. Q. 8, p. 69. Q. 9, p. 76. Q. 10, p. 79. Q. 11, p. 82. Q. 12, p. 86. Q. 13, p. 89.
Mr. F. H. Wilkinson, C.S.	Sub-Collector of Salem -	- - - -	IV.—Q. 6, p. 282. Q. 11, p. 399. Q. 24, p. 459. Q. 25, p. 464. Q. 27, p. 470.
Mr. W. Wilson, C.S. -	Acting Director of Revenue Settlement.	- - - -	IV.—Q. 13, p. 416. Q. 15, p. 427. Q. 23, p. 454. Q. 25, p. 464. Q. 26, p. 468.
		MYSORE.	
Mr. L. Ricketts - -	Deputy Commissioner, Bangalore.	Mysore, 1877–78 - -	II.—Q. 1, p. 10. Q. 2, p. 19. Q. 3, p. 22. Q. 4, p. 25. Q. 5, p. 41. Q. 6, p. 61. Q. 7, p. 67. Q. 8, p. 70. Q. 9, p. 77. Q. 10, p. 79. Q. 11, p. 83. Q. 12, p. 87. Q. 13, p. 89. III.—Q. 2, p. 106. Q. 3, p. 110. Q. 4, p. 116. Q. 5, p. 128. Q. 11, p. 183. Q. 19, p. 216. Q. 20, p. 220. Q. 22, p. 227. Q. 24, p. 238. Q. 25, p. 243. Q. 26, p. 251. Q. 29, p. 275. Q. 30, p. 280. Q. 31, p. 284. Q. 32, p. 288. Q. 33, p. 293. Q. 35, p. 303. Q. 36, p. 306. Q. 37, p. 317. Q. 38, p. 326. Q. 39, p. 335. Q. 40, p. 346. Q. 41, p. 348. Q. 42, p. 358. Q. 43, p. 355. Q. 44, p. 358. Q. 45, p. 361.
Colonel R. H. Sankey, R.E.	Chief Engineer - -	Mysore, 1877–78 - -	II.—Q. 6, p. 58. Q. 9, p. 76. Q. 10, p. 79. III.—Q. 2, p. 105. Q. 4, p. 115. Q. 10, p. 174. Q. 11, p. 182. Q. 20, p. 220. Q. 21, p. 222. Q. 33, p. 292. Q. 35, p. 303. Q. 38, p. 326. Q. 40, p. 346. Q. 41, p. 348. Q. 42, p. 352.
Lieutenant-Colonel J. W. Johnson.	Chief Engineer - -	Mysore, 1877–78 - -	II.—Q. 6, p. 61. Q. 7, p. 67. III.—Q. 2, p. 106. Q. 3, p. 111. Q. 4 and 5, p. 116. Q. 6, p. 155. Q. 7, p. 164. Q. 8, p. 166. Q. 10, p. 175. Q. 11, p. 183. Q. 13, p. 191. Q. 15, p. 199. Q. 18, p. 210. Q. 19, p. 216. Q. 20, p. 220. Q. 21, p. 223. Q. 22, p. 227.
Major C. S. Moncrieff, R.E.	Late Officiating Chief Engineer.	Mysore, 1877–78 - -	II.—Q. 6, p. 61. Q. 7, p. 67. Q. 9, p. 77. III.—Q. 2, p. 106. Q. 4, p. 116. Q. 5, p. 128. Q. 6, p. 155. Q. 7, p. 164. Q. 8, p. 166. Q. 9, p. 168. Q. 10, p. 175. Q. 11, p. 183. Q. 12, p. 188. Q. 13, p. 191. Q. 14, p. 195. Q. 15, p. 199. Q. 17, p. 206. Q. 18, p. 210. Q. 19, p. 216. Q. 20, p. 220. Q. 21, p. 223. Q. 36, p. 223. Q. 38, p. 326. Q. 43, p. 355.

LIBRARY

CHAPTER II.—REPLIES.

QUESTION 1.—INDICATIONS OF APPROACHING DISTRESS.

How does distress consequent on drought first make itself felt among the people, and how is it first brought to the notice of the district officers? What are the indications by which the district officer would judge whether the distress is due to temporary or local scarcity, or is likely to be the forerunner of very severe general distress ending in famine? What steps should be taken to ensure that such indications are brought to his notice? To what extent does the existing district organization suffice to ensure early and trustworthy reports, and if not sufficient, what other measures are suggested as requisite?

Punjab.—7 officers have answered. The purport is the same as for Bombay. The district organization is considered sufficient by the majority.

North-Western Provinces.—30 officers have answered the question.

The purport of the replies is similar to that of the Bombay answers.

Bengal.—17 officials and others have answered.

The views as to the way in which distress shows itself do not much differ from the foregoing. As to the sufficiency of existing district organization, opinions differ, but in some cases the opinion is very strongly expressed that it is quite insufficient. The police are the agency for supplying information, supplemented by a large non-official class. Agricultural and trade statistics are wanting.

Bombay.—12 officers have answered the question.

The substance of their answers is—

Distress shows itself first by a rise in prices and simultaneous decrease of employment for labour.

It comes to the notice of the district officers by personal observation and from the reports of the village and taluka officers, and returns of prices and rain-fall, and of crime.

The district officer would judge whether the distress is temporary by considering the time of the season at which it begins, the condition of crops in adjoining districts.

He would cause all subordinate officials to travel in their charges, and report periodically, and, if needful, would himself make a tour of observation. The existing district organization is considered sufficient.

Madras.—21 European and 4 Native gentlemen have furnished replies, the general tenor of which is as follows:—

Distress consequent on drought first makes itself felt amongst the poorer classes by the enhancement of prices, the scarcity of drinking water for man and beast, the contraction of the labour market consequent on the suspension of agricultural operations, and a difficulty in negotiating the petty loans which in favourable years the village money-lenders are in the habit of granting on the security of the season's crop.

The district officers are first apprised of the condition of matters by the reports they receive from their subordinates stationed in different parts of the district of the state of the crops and season, by the rain-fall and price returns, and by petitions from the smaller landholders praying for a remission of the Government assessment. It does not, however, follow that because prices have risen, and the labouring classes experience difficulty in finding employment, that anything in the shape of a famine is to be apprehended. In many cases the distress is merely local, and may be traced to the failure of the crops in the vicinity, and will disappear with the next rainy season; but should this prove unpropitious, and inquiries show that the surrounding districts are similarly affected, if prices continue to rise throughout the country, if the markets generally are not so plentifully supplied as usual, if the police returns show an increase in crime, if there are panics in the bazaars leading to the closing of the grain dealers' stores, it will be reasonable to conclude that distress is becoming general, and will be followed by famine more or less intense according to circumstances.

So far as Madras is concerned there is a general unanimity of opinion that the existing district organisation is sufficient to ensure trustworthy reports of imminent distress and possible famine.

Central Provinces.—Mr. G. J. Nicholls, C.S., who has been employed in various capacities in the Central Provinces since 1865, and Surgeon-Major J. F. Barter, the Sanitary Commissioner, whose services in the Provinces extend over a period of 14 years, were selected by the Chief Commissioner to reply to the questions circulated by the Famine Commission.

The replies to Chap. II. are from the pen of the former officer.

Mysore.—9 European officers have replied to this chapter of questions. The summary made of the Madras answers is applicable to these replies.

The evidence of Colonel Sankey, Major Moncrieff, Colonel Johnson, and Mr. Ricketts has been selected for publication.

PUNJAB.

Captain Wood.—I believe that the official reports of the present *tahsíl* agency, together with intercourse with the leading men of the sub-division, were sufficient to furnish me with reliable information with regard to the state of the sub-division.

Lieutenant-Colonel Parsons.—(*a.*) Distress consequent on drought first makes itself felt among the people in increase of price of necessaries of life; the poorer classes, village menials and labourers being unable to provide sufficient food for themselves and families, itinerate in quest of charity. In Gujrat the distress has been chiefly among immigrants from the famine-stricken Jummoo territory, and its indications, the daily arrival of paupers seeking employment and charities at the larger towns and villages, principally in the Gujrat *tahsíl.* (*b.*) Earliest indications are afforded to the district officer by reports of *tahsíl* and police officials.

(*c.*) In this province all instances of distress are owing to temporary or local scarcity, the probable extent of distress being estimated by severity of the drought, and condition of the people with reference to immediate preceding harvests. (*d.*) The existing district organization has, in the writer's experience, been practically sufficient for obtaining early information in regard to distress, reports being made by *tahsíl* and police officials; but it would seem advis-

Ch. II. Qs 1.

Punjab

able that distinct specific instructions should be circulated for general adoption to secure early reports at sadr head-quarters, and also to Government.

Mr. Roberts.—Distress consequent on drought first makes itself felt by the rise of prices which always takes place in anticipation of the failure of the ensuing harvest, and in this district last year it was first brought to my notice by petitions pouring in from all parts for grants of money for the employment of agricultural labourers and other village servants upon village tanks. This was soon followed by a remarkable increase in offences against property, and by migration from the villages in search of employment, or of pasture for cattle. It is impossible at the beginning of a bad season to judge from the circumstances of any one district whether the famine is likely to be partial or general, as everything depends on the extent of country over which the drought prevails, and on the rainfall of succeeding months, which cannot be estimated beforehand. The failure of one crop, though it will cause a rise of prices, and consequent privation to the poorer classes, will not produce an actual deficiency of food grains; but the failure of two or three harvests in succession, or the total failure of one followed by deficient out-turn in several, will necessitate imports, and absolutely deprive many thousands of the poorer agriculturists, proprietors as well as tenants and labourers, of the means of purchasing, unless they are saved from destitution by timely suspensions or remissions of the land tax. The district officer can best form a forecast of the future by noting the meteorological reports and crop returns of other districts and provinces of India. The *Zaildár* system, introduced with the new settlement, is well adapted for securing the necessary information of the condition of a district, and when it comes into regular working, will, if properly utilized, ensure an early supply of trustworthy information.

Mr. Benton.—From what I have said elsewhere it will appear that I consider something altogether beyond district organization necessary to secure the information requisite for dealing with distress or famine, inasmuch as local distress is nowadays so much influenced by scarcity or plenty elsewhere. To speak, however, of district organization, I think that the utmost attention should be given to securing correct information as to the out-turn of each crop, by determining the exact area under each crop, and the proper average produce to be employed for bringing out the out-turn. This is a laborious work, and the Patwári is the chief agent for performing it. During settlement he has no time or opportunity of attending to it. One half of this district will be seven years under settlement, and the other half may be as long in addition. During all this time this important work must be more or less neglected under present arrangements. I think that provision ought to be made for its performance at all times. Further, distress adds to mortality; and the present mortuary returns, except perhaps for the towns, are so untrustworthy as to be useless except for the sake of making a guess by comparing the untrustworthy returns of one period with those of another. I think in the Punjab the *Chaukídárs'* rules should be altered so as to enable a *Chaukídár* who could read and write to be appointed for the purpose of reporting vital statistics for a circle of villages. This would secure accurate returns at small cost. At present the returns are not submitted through the Deputy Commissioner, but he might obtain perusal of them from the police before they are sent in. A yearly return showing results for each week or month for each locality should be published by the Sanitary Commissioner, to enable comparisons to be made if it were suspected that mortality was due to distress.

North-Western Provinces and Oudh.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. A. Colvin.—By high prices and difficulty of getting food or labour. It is brought to the notice of district officers by their own observation of the changes coming over the people's habits, by petitions addressed to them, by the people asking for employment, and by the reports of their subordinates.

The indications I should look to are the more or less general area of drought, or the severity of drought and the character of the season in neighbouring districts. Information as to rain-fall, area sown, area in which seed is germinating, stocks, and state of imports will give him the information he wants. The existing district organization is good, but statistics as to quantity of out-turn might be improved.

Mr. Sandys.—Distress consequent on droughts makes itself felt, and is brought to notice by the influx of hired labourers into the larger towns, by the state of destitution to which the poorest amongst the weavers and others of the artizan class are reduced in the towns, by the numerous complaints against the grain merchants of refusing to make the customary advances for food, by the increase in the number of cases of thefts and gang robberies of any edible articles, and by the frequent complaint that the export of grain from villages had been opposed by the villagers.

Whether the distress is temporary or is likely to end in a famine depends on what the out-turn of the last crop has been, what the prospects of the ensuing harvest and the state of the stocks are throughout the district, the province, and adjoining provinces.

The district officer's local knowledge as to the out-turn of the last crop and prospects of the next harvest, the weekly weather and rain-fall reports published in the Government Gazette, and the prices current are the best guide the district officer has as to whether the drought will result in distress only, or end in famine. The rain-fall reports might easily, and with advantage, be published up to a much later date than they are at present.

Mr. Kennedy.—The first economic effect of a drought is to restrict the circulation of capital and credit. Among the agricultural community more than three-fourths of the total population is engaged in the actual cultivation of the soil. The principal economic feature in all agricultural communities is the necessity of a large outlay of capital in advance, and the slowness with which it repays itself. All agricultural communities are therefore large borrowers; but while the agriculturists in the more advanced countries of Europe require to borrow capital only for the actual working of their farms, the Indian cultivator needs to borrow for his own subsistence. He thus forestalls yearly the greater part of his crops. Should the prospects of the crops fail, he must fall back on his own resources. The severity of the famine depends so far as the agricultural community are concerned upon the amount of capital which the cultivator has saved, or the amount of credit which he can command, notwithstanding the failure of the year. The proportion which this class bears to the rest of the cultivating population will be the main factor deciding the fate of the district. If the agricultural community as a body can bear the pressure, the district will speedily recover its former prosperity, but if it cannot, the district must become demoralized.

All other classes of rural community depend upon the agricultural class, and although the poverty of these subordinate members of rural society makes distress to be first visibly felt among them, the distress is due to the restriction of the annual credit required by the cultivators. Capital is extremely sensitive of any prospect of disaster, and the system upon which

loans are arranged in this district increases the natural restriction of credit at the commencement of a famine. The sums lent by the baniya are from time to time repaid in kind. But the annual settlement of accounts does not take place until an average rate of prices is struck for the whole district. This is done by a meeting of the principal traders, landlords, and cultivators at Baragaon. When the Baragaon *katauti* is struck, the rate for transactions in every other part of the district during the past year becomes immediately known.

This settlement takes place about a month after the monsoon is due, and, when the prospects of the young sugar-cane are assured. By this time also the failure or success of the monsoon is certain. The cultivator has already parted with his produce in anticipation of the annual settlement, the baniya has no interest in supporting the cultivator any longer if the speculation appears attended with risk. The first effect therefore of the failure of the monsoon is to withdraw the credit upon which the whole agricultural population subsists.

If we consider that three-fifths of the population depend upon agriculture, that 90 per cent. of this class require to forestall one-half to two-thirds of their annual production, and that the capital invested in household necessaries or luxuries, or in farm stock and implements, becomes utterly unsaleable, it is easy to perceive the calamity which a sudden collapse of credit must create. The agriculturists form two-thirds of the population. The field labourers and the other classes of rural society who depend upon them for employment and subsistence form two-thirds of the remainder. The means of this class are of course smaller than those of the poorest cultivators. The male members of these classes are accustomed to leave home in search of employment. When the rains failed in 1877 and the cultivators were unable to give them employment they usually afforded, a general migration began among the field labourers; this soon extended from individual to families.

This class did not frequent the towns at first, but wandered from village to village. Mendicants and helpless persons also joined in the stampede and were the first to flock to the towns in large numbers. This migration is the first too visible sign that famine has overtaken the country. Two other ordinary effects of famine follow shortly after. The one consists in the general depreciation of every article except food, and the impossibility of finding purchasers for ordinary goods even at the lowest price. I have entered a house of a weaver who had died from starvation and found cloth enough to support him and his family for weeks in ordinary times.

Mr. Leeds.—Distress resulting from drought makes itself felt amongst the people by a rise in prices and a consequent contraction of the demand for labour. It is brought at once to the notice of the district officer not only by the reports of his *tahsíldars* and police subordinates, but also by the evidence of the price current, and of his own eyes and ears. It is difficult to specify the indications which would lead a district officer to judge whether the distress were merely temporary, but in practice I think he could scarcely ever be at a loss to decide. He is kept steadily informed of the state of the crops, of prices, and of all other circumstances which affect the condition of the masses in his own district, and has ready means of access to information regarding what is passing elsewhere. The main indication of the extent and severity of distress must always be the price of food grains. When wheat rises from 25 seers, its normal rate to 12 seers for the rupee, and other food grains in proportion, there can be no doubt that very severe distress must be suffered by the labouring classes, whose remuneration at the best of times is not in excess. In the North-Western Provinces the existing district agency appears to me amply sufficient to meet the requirements of the case and to ensure early and sufficiently trustworthy information.

Mr. Cornwall.—In a district like Cawnpore, partly canal-irrigated and partly dry, *i.e.*, practically unirrigable from wells on account of the depth to water, distress first makes itself shown in the dry portion. The reason for this is that in the dry villages the crops, if any were sown, have failed from want of rain, and as the season advances the village *Baniya* plainly perceives that if he allows the cultivators food as usual, upon the understanding that he will be repaid when the crop is cut, he will be the loser. He consequently refuses to sell except for ready money, and thus throws the whole of the tenantry and their dependents, amongst whom I class the petty non-agriculturists, upon the hands of the landlord for support. In some instances the landlord has sufficient resources at his disposal to accept the burden; in others, and especially in *bhaiácchára* villages, the whole population is thrown upon charity for support.

In the canal-irrigated villages distress does not appear so soon, as there is generally a good area under indigo and sugar-cane, for the former of which a good price is available at an early period of the season, and the latter can be sold as required for fodder of cattle, as was the case with nearly all last year's crop. In these villages there is consequently a certain degree of security for the *Baniya*, and he continues therefore to give assistance so long as that security exists; so that distress is postponed for some time, and may, as was the case last year, not appear at all.

Distress in the villages is very soon brought to the notice of the tahsíldar by one of the *tahsíl* establishment, or by the supervisor, *kanúngo* or *patwári*, and through him to the district officer. But the influx of poor people to the sudder station, the unusual number of beggars on the roads, and the increase in petty thefts and burglaries, must also attract early notice.

The nature of the distress and its probable duration depend largely upon the past harvests. To compare this year with last, when the rain failed last year, there was in the early months of June and July no apprehension of scarcity. There had been good harvests, both *kharíf* and *rabi*, and the high prices obtainable for grain of all kinds in consequence of the demand for wheat for export and for other grains for the Madras and Bombay famine districts had enabled the cultivators, or at any rate such portion of them as are not encumbered with debt, to dispose of their produce advantageously. There was therefore considerable purchasing power in the villages, and if more discretion had been used and less grain exported, I think it is highly probable that the distress could have been tided over. The cultivators, moreover, had their seed grain in hand for both *kharíf* and *rabi* harvests. In spite of the failure of the *kharíf* sowings, in some *parganas* almost total, there was little distress except in the dry southern unirrigated *parganas*; and then only in villages where the Baniyas absolutely refused all help, and when the *zemindars* had not the means to assist. This lasted throughout August and September; but with the October rain the Baniyas resumed operations, and distress disappeared to a great extent; and when the December rain fell, and the *rabi* was believed safe, it disappeared entirely. This year the condition of things is very different. Last year's *kharíf* was inappreciable, and the *rabi* was a disappointment. The large area in excess of that ordinarily sown has contributed its quota to the food stock, but the grain of all descriptions is so light and wizened that in actual weight I doubt the crop of wheat and barley being above average, and grain and peas are very bad. In addition to this the failure of the kharíf has left the cultivator without seed, and for the ensuing rabi sowings he will have to obtain seed elsewhere, for none of that grown this year, except perhaps barley, is fit for use as seed grain; and above all this, the rabi has had to bear more than its usual weight, as from it the cultivator has had to pay his full rent, and also the cost of food for his family during the past eight months, both of which would have been ordinarily provided for in a great measure from the kharíf. Now he finds himself with little money and

no seed, whereas last year he had more money than usual and the full quantity of seed, as well as some grain in store. As last year the distress under the circumstances related was only temporary, so this year, under the vastly altered conditions, there appears, in the event of rain being withheld, every probability of a severe famine. Such comparisons as these seem to force themselves into notice, and require no special steps to bring them forward. The present district staff, both revenue and police, contributes information each in its own sphere, and is quite sufficient to ensure early reports of anything deserving of notice being made. The accuracy and value of these reports must depend upon the reporters. A good tahsildar's information is invaluable, but there are only a few such in each district. The remainder seem to take no pains or to think what they are writing, and so the result of their reports are sometimes remarkable. As a rule, the best men seem to be those who have gone early in life to active work; but the less active office men, who have worked up step by step, rarely make such good tahsildars, though there are occasional exceptions.

Mr. Webster.—The increase of (so to speak) non-professional beggars, as it is the first, so it is the most unmistakeable sign of distress. At present—I say "at present," for I discern signs that the exceeding liberality with which Government has relieved the wants of the people at the very first sign of distress of late has tended to induce habits of pauperism, and the people are beginning (only beginning as yet) to take to begging and to clamouring for Government relief under circumstances which formerly would not have induced them to do so; between harvests when work is slack, day labourers, and when trade is bad, weavers and the like, are beginning to take to begging. This is a serious sign, and one that the Government would do well to take heed of. The consequences of pauperizing a population like that of the North-Western Provinces and leading them to rely on Government for their support at the first approach of hard times would be ruinous; and I think our famine policy does tend in some slight degree in that direction in one point; in all others I think it wise and prudent as well as beneficent and generous The point I refer to is the suggestion (for I believe it is not more at present) that any adult able-bodied male should receive gratuitous relief from the Government because his sense of personal dignity renders him averse to working with his hands to support his life. I consider that if this principle be admitted, and if the State undertake not only to save the lives of those in danger of starvation, but consents also to allow the recipients of its bounty to dictate the terms on which they will accept that bounty, then we have taken the first step, and a very long one it is, towards the demoralization and pauperization of the population. Let this idea that Government will gratuitously support anyone able to work be once confirmed, and every man, woman, and child who does not in ordinary times earn his or her livelihood by manual labour on road or field will find personal dignity in the way of accepting anything but gratuitous relief from the State.

Captain Pitcher.—Distress cannot fail to come under the notice of any intelligent district officer from the outset, in the bare fields, in the unwonted spectacle of whole families on the tramp with want stamped in their faces; in a sudden irruption into the station of begging and starved looking children, sent out to beg by parents who are scarcely yet bold enough to venture on the unaccustomed thing; in the spectacle of men harnessed by the dozen to well ropes in the place of bullocks; by the high prices of grain; by noticing that the streams of the grain traffic are reversed, and that instead of flowing into towns the grain is flowing out; by constant reports from thánahs and tahsíls.

Mr. Lumsden.—The exact shape in which distress consequent on drought first makes itself felt among the people would depend to a considerable extent on the particular season at which it began to be felt; dearth of work for the labouring classes; a steady, if gradual, rise in prices; difficulty on the tenant's part in meeting the landlord's demands for rent, and on the landlord's part in meeting his engagements with Government; a contraction of private charity among the middle and even well-to-do classes of native society, and a visible increase of declared pauperism applying for public relief—these are some of the ways in which distress *consequent* on drought makes itself felt at a very early stage, and are at the same time certain indications to the local officers that distress, more or less severe, is prevalent in the district.

No doubt sometimes first appearances of distress are exaggerated and its severity misrepresented, but there is no risk of their escaping early notice; the risk rather is that, with the knowledge of the existence of distress, the local authorities may either propose measures of Government relief prematurely or delay doing so too long, both errors certain to be productive of evil and involve the State eventually in unnecessary expenditure.

Sir Digbijai Singh, G.C.S.I., Mahárája of Bulrampur.—At the commencement of famine the causes of the first appearance of distress to the people are apparent. The sowing process being over, a very small portion of the grain in store is left to the cultivators. When the rains fail in the month of "Sawán" (*i.e.*, from the middle of July to the middle of August) the prices of food grain in the markets begin to rise, and the poor people that are not cultivators at once begin to feel the effect of famine. The poorer among the cultivators, who depend upon work for their support, having spent away the whole or a greater portion of their grain in store, and seeing no good prospects for the future, are put to much trouble, and are compelled to ask their landlords for loans of grain for their support. The landlords, on their part, do not dare to part with their stores in such times. The cultivators are then subjected to more and more distress, and they keep with great care the small quantity of grain of which they are possessed at the time, so much so that they do not distribute the usual alms to the poor beggars, who are consequently reduced to the most wretched condition, as if near to death. When the report of these circumstances reaches the Government, orders are issued for the organisation of relief works and poorhouses for the support of the distressed people.

In great towns and cities the effect of famine is felt, first of all, by the poor people who depend upon work for their subsistence; for the dealers in grain, as soon as they find the prospects for the future unfavourable, begin to raise the price of food grain, which becomes at once a source of evil to the poor. In this case, if the market rates be carefully regulated by the proper officers of the Government, the distress may be, in a great measure, mitigated. In such towns and cities there are many old and poor people who depend for their support on their wealthier relatives and friends, and there are numerous beggars who depend upon public charity. In times of famine, when public charity vanishes away, such people are left helpless, and they then hang on Government for assistance. Many of them migrate to other districts, and life becomes a burden on them. In this circumstance the Government only can take care of such persons. It will be well to obtain, through a trustworthy official, the census of such afflicted persons, and send those who are able to work to the relief works opened for the purpose, and those who are old or unable to work to the poorhouses.

If it appear to the Deputy Commissioners of the districts that the famine is likely to last for a short period, and there is no fear of it in the future, it will be well to keep open the public and municipal works till the termination of the famine. At the same time it will be advisable to superintend the rates of the market, and keep them on a just scale, and to require

the dealers in grain to lessen the price according to the nature of the crops and the supply of grain in the markets. Then such labourers on the relief works as may seem able to earn their bread somewhere else may be dismissed from the works; but those that are employed solely for the purpose of being supplied with food should be retained. When the harvest be gathered in, the market be abundantly supplied with grain, and the rates revert nearly to the original state, the relief works may be closed.

But when the famine be of a formidable nature and do not appear to vanish after a short duration, and the number of helpless persons be so great as not to be supported by the ordinary district poorhouses, the Government should open poorhouses on a large scale, at proper places, and therein feed such persons without extracting any labour from them. For such persons as cannot leave their place of abode, for several reasons, it will be proper to keep, in every great "muhalla" or village, depositories of grain, and to distribute them tickets, by showing which they should be supplied with their daily rations from the said depositories.

BENGAL.

Mr. Barlow.—So far as working upwards and forcing themselves upon the notice of the district officer is concerned, the actual sufferings of the people in the very early period of distress disclose but the smallest outward and visible signs. Close and continued personal observation of individual cases can alone be relied upon to secure their detection. Referring to the Orissa famine, and omitting the case of one particularly isolated tract between the sea and the Chilka Lake, where symptoms of actual famine were discovered as early as November 1865, the state of actual distress, which must have prevailed generally in all districts was not discovered by the officers who were anxiously and carefully watching for it. It was not until May 1866, when the people began to come into towns, and actually famine-stricken objects showed themselves, that the reality and magnitude of the calamity was fully recognised and acknowledged.

Similarly, in February 1874 I made a tour in North Bhagulpore in company with the Collector, to examine into the state of affairs. We had no difficulty in ascertaining the fact that the crops had failed and all classes were freely predicting distress, present and to come; but beyond an unusual congregation of beggars at our camping places, which might be explained by the knowledge of these people that we were prospecting famine and the hope of something to be gained thereby, our opinions as to the existence and extent of distress had to be based more upon the theory of what must be the effect of the failure to the crops than upon conditions of actual suffering amongst the people generally that we were able to discover. This fact is probably explained by the circumstance that the poorer classes concerned are at all times in a comparatively destitute condition. They live from hand to mouth. They have no property, nor anything in respect of which distress or famine can operate until it touches their bodies. Emaciation takes some time to appear. The lowest classes always supplement their food with an admixture of herbs procured from field or jungle. The proportion of these is increased as pressure increases, and even after the consumption of wholesome food has entirely ceased, life is preserved by subsistence upon *sag*, &c., until prostration.

A district officer would, I suppose, judge whether distress is due to temporary or local scarcity, or likely to be the forerunner, of very general severe distress ending in famine, by observing the extent of failure of crops and the range of prices in his own district and elsewhere. He would also consider whether the last year or two had been years of plenty or otherwise, the state of stocks, trade, &c. As regards the state of crops and prices, I think that existing means are sufficient for keeping officers informed of what is going on; what with weekly notifications in the Gazette, newspaper reports, and communications (personal) between officers, and lastly, the action of Government itself early in the season, when times become very threatening. The state of stocks and trade under the Bengal system is a knowledge to which the district officer cannot attain. Government are collecting statistics of river trade at registering stations, and they receive the railway traffic returns. These may be conveniently supplied to local officers as soon as a means has been devised whereby they may know something about the produce of their districts, but not beforehand. This point will be noticed in detail under question 5.

My opinion is most distinctly that the existing district organization is not sufficient to ensure early and trustworthy reports as to distress. The direction in which it fails has been indicated above. The information which comes before all officers alike is vague, wanting in detail, and often inaccurate. This naturally produces a similarity of views and tone amongst officers of all grades, and with the tremendous responsibility involved, no man can take a line of his own with any confidence, whether it be in the direction of raising an alarm or resisting one. The remedy which naturally suggests itself for this state of things seems to be to reduce the unit of administration. Given a year to prepare beforehand for certain famine, I suppose that by sub-dividing sub-divisions and districts, and putting officers to work under active supervision, in areas of a moderate size, we should be able to make a list of the names and numbers of people that would be likely to require relief. In the absence, however, of any possibility of keeping up a permanent organization of this kind, while we wait for famine, there is no alternative open but to try to render the present agency (which should be strengthened wherever and whenever opportunity permits) as efficient as possible. I think that the way in which this may be best helped forward is by putting into the hands of the district officers accurate statistics regarding the food supply, and the economic condition of the agricultural and labouring population of their districts. If this was done it should lighten the difficulty of dealing with matters when bad times come. The district officer should then have a fair idea at least in what quarters to look for loss and distress, and by a system of closer inquiry within limited tracts, calculations more approximately correct than the general ones heretofore adopted might be worked out. This is probably the idea that the late Lieutenant-Governor, Sir G. Campbell, had in view when he created the Subordinate Executive Service in Lower Bengal; but owing to the occurrence of the famine of 1874 immediately after, and the staff becoming from the first swamped in the general administrative work of the country, statistical inquiries have been hardly touched up to date.

Although the staff available is small, I think that a beneficial result would soon be apparent in this part of the country if they were steadily kept at work upon the subject in hand. In order to effect this, I would constitute a Statistical Department in charge of the officers of the Subordinate Executive Service in each district in Bengal, and I would put a stop to the miscellaneous administrative work done by them, which was heretofore performed by the ordinary district staff. New measures, like taxation, &c., should pay for the agency necessary to introduce them.

Mr. Worsley.—Distress, consequent on drought, first makes itself felt among the people by compelling them to reduce their daily consumption of food grains,

and to part with such property as they may possess in the shape of clothes, trinkets, &c., in order to obtain money for the purchase of food. If the district officer be a man of active habits, his own personal observations will apprize him of the existence of distress, but in any case the distress will be soon brought to his notice by the police.

The three harvests of Behar are *bhadoi*, *aghani*, and *rabi*. The first two rarely fail in an equal degree in the same year, and I should say generally that the total failure of any one harvest would not in itself cause famine. I have never myself known any instance of a *bhadoi* harvest falling below eight annas, and a failure of the crops to this extent would not cause me any anxiety. It is the combined failure of the *aghani* and *rabi* crops that causes famine, and a failure of the latter harvest usually follows a failure of the former.

When the latter rains, *i.e.*, the rains of August, September, and October, have generally failed and a very short rice crop has been reaped; when little or no rain has fallen during the winter months, and *rabi* prospects are poor; when the reports of neighbouring districts are unfavourable, prices high, and importations small, the appearance of distress under such circumstances would lead me to apprehend severe general distress in the future. If on the other hand the failures of the rains and harvests have been confined to my own district and one or two neighbouring districts, and if prices be kept down by importations of food, I should fear nothing more than temporary scarcity. But even with the worst prospects in February or March, a favourable change in the weather, such as to admit of "*cheena*" being widely sown and a fine mango season later on might serve to avert severe general distress. From the time when the failure of the rains is an ascertained fact, the attitude of the district officer and his subordinates should be one of constant watchfulness, and the former should make a point of visiting every portion of his district during the ensuing winter. In this district there are unusual facilities for obtaining early and accurate information regarding the state of the crops and the condition of the people, owing to the large number of indigo factories scattered about the district. The information supplied by planters, sub-divisional officers, and the police, and my own thorough knowledge of the district and frequent excursions into the interior at all seasons of the year, make it very improbable that distress should take me by surprise at any time.

Mr. Hodgkinson.—It is not in the appearance of the people themselves that a district officer will look for the earliest indications of distress. At the best of times the poorer classes live very sparingly, and the deterioration of their condition in times of dearth is very gradual. After they have been reduced to half rations, or to one meal a day, for some time, signs of want and emaciation may be traced in the persons of the children. But long before this period is reached the existence of distress ought to be recognised and measures to relieve it commenced, unless indeed a new harvest is just at hand. The distress in 1866 was taken in hand too late; relief works opened at an earlier stage would undoubtedly have mitigated much suffering and saved not a few lives. So silently was the distress borne, and so slight were the outward signs of it, that few in the district had any conception of the extent to which it had grown when relief depôts were opened.

The district of Sarun was at the Census of 1872 found to be the most densely inhabited agricultural district in the Lower Provinces. The population averaged 778 per square mile, varying from 605 in Baragaon *Thana* to 984 in Musruckh. The people, except in some half a dozen of the principal towns and trade centres, live almost exclusively by agriculture. Though the fertility of the district is extraordinary, the area is limited, and by the pressure of requirements of the ever-increasing families of petty maliks and the more influential cultivators, as well as by the growth of indigo cultivation, principally on the *zuraut* system, large numbers of the poorer classes have lost their lands altogether; and holdings have become small by sub-division. There is therefore, an unusually large labouring population, a population, for which even in good years the district barely affords adequate employment. It is naturally amongst this class that in years of dearth distress first makes itself felt. Employed ordinarily in field labour, a long drought at agricultural seasons of the year restricts their subsistence. If the former harvests have been good and they have been able to put by a little store, or if prices are moderate, some time will elapse before anything like actual general distress shows itself; but distress more or less severe must be the necessary concomitant of a continuance of the drought for any lengthened period. High prices and the difficulty of obtaining labour are the consequences of drought first felt by the people. The returns furnished from the district bazaars are sufficiently good evidence of the prices; and the resort of unusual numbers to the ordinary road repairs if going on, as well as an unusually active emigration from Sarun in search of temporary employment in Cooch Behar and eastern districts, will generally prove the short demand for labour in the district.

In order to form an estimate of the character of the distress, the safest indications may be ordinarily derived from a consideration of the prices at the different bazaars of the district taken in connection with a general estimate of the food supply of the district and of the country generally, as well as with the prospects of any crops which may be or should be on the ground. The power and direction of trade will also have to be considered, and the quantity and distribution of the rainfall. Special circumstances will also affect the estimate. Thus the hailstorm of February 1866 directed attention to probable intensity of distress in a particular tract, and the failure of the poppy in the present year points to the unusual impoverishment of a particular class. The existing district organization is supplemented by a large non-official class in this district, and the receipt of early and trustworthy reports is fairly secured. But undoubtedly something could be done, and I think ought to be done, to obtain agricultural and trade statistics. Our estimates of stocks in hand are the veriest guesses. In Behar the *ptwaris* might well be made by law to file statistics of cultivation. They might not be very accurate at first, but they would be at least better than nothing. I obtained statistics through the *ptwaris* when at Hutwah for a portion of the estate, and found them, as far as I was able to test them, a fair approximation to the truth. In the bazaars a *chowdry* might be appointed at a very inconsiderable cost, and with a little training and supervision at first from some of the district staff, tolerable estimates of exports and imports might be arrived at.

Mr. Metcalfe.—If the police or sub-divisional reports state that the lower classes are beginning to leave their homes and wander about; that petty grain thefts are increasing; that the village markets are scantily attended; that beggars are increasing; that ornaments are being pledged, it is to be taken for granted that local distress has actually commenced. It is a very remarkable fact that, as soon as the pressure of famine is felt in a village, the inhabitants proceed to wander over the country, partly in search of vegetable roots, and partly in the hope of finding food which they cannot obtain in their own villages or fields. It is to my mind one of the most painful signs of the scarcity of food to see women and children wandering restlessly, silently, with downcast faces, through the mango tôpes and jungles searching for food, knowing that none will be found, yet still hoping to find some vegetable food or berry to appease the pangs of hunger. It will depend very much upon the character of the sub-divisional officers and their active habits, how far the district officer can be guided by

their reports as to the exact extent and magnitude of the impending scarcity. In most instances he will do well personally to visit the places indicated without any loss of time. The district officer will be warned, too, by the advent of beggars into grain marts and towns that the scarcity has already affected the very poorest of the population.

It should be an important part of the duty of every police officer to submit weekly reports of the agricultural prospects of his police station. The police in Behar have been gradually instructed to do this, but my experience is that it is still difficult to obtain accurate information from them. As a rule, police reports are too general in their character to be of much practical use in conveying accurate information. For many years the police have regarded themselves as a body for the suppression of crime only, and are backward in reporting on many general subjects which it would be useful for the district officer to know. The districts which have a patwari agency are far in advance of those districts which have only the police information to guide the district officers. In my opinion, the existing district organization in Behar is sufficient to ensure early and trustworthy reports in agricultural matters. The police and sub-divisional officers have now by experience learnt to regard weather prospects as important a part of their duties as criminal work.

So many of the larger districts have been sub-divided that there are few tracts beyond the personal supervision of a magisterial officer. The reports on rain-fall, submitted weekly to the district magistrate, keep him informed of the condition of the crops and of the agricultural prospects of his district. Within the last few years the local police have been gradually worked up to the importance of reporting on agricultural prospects. Formerly little attention was paid to this subject of crops and weather by either sub-divisional or local police; but even under the existing district organization it is quite possible for high prices to rule in parts of a district, virtually reducing the poorest class to great distress without immediate attention being called to this subject. Zemindars, even in cases where their tenantry are concerned, are found to be dilatory in conveying information.

Previous to the Behar famine of 1873–74, there were five occasions in which local scarcity of food grains prevailed within a period of 17 years; on each occasion there was more or less loss of life amongst the pauper population; yet these partial failures of crops at the time attracted no marked attention. The agricultural poor accepted the distress with that marvellous patience and meekness characteristic of the native in famine years almost without a murmur. My opinion is that the district officer must trust chiefly to his own energy and activity to ascertain exactly the area and extent of scarcity. Although much may be done—

(*a.*) By training police officers that their attention must be directed to the agricultural prospects, as well as to the detection and prevention of crime.

(*b.*) By raising the position of the subordinate officers of police, and introducing a better class of men as inspectors.

(*c.*) By encouraging correspondence between district officers and landed proprietors on agricultural matters. Letters addressed by collectors to zemindars asking specific information invariably meet with a ready response, though the information given is not always accurate or sufficiently in detail.

Mr. Kirkwood.—In Bengal (Lower Provinces) the existing ordinary district staff, if well turned to account, is quite sufficient to ensure early and trustworthy reports. People now-a-days are so well aware that it is the desire of Government to aid the famine stricken in their affliction that they are not slow in bringing to light any features of an alarming nature. Even at the end of 1865 in Orissa they did so, though the Government policy was not then so certain, and they for some time, even in the face of discouragement, persisted in not remaining silent.

BOMBAY.

Mr. Spry.—Distress consequent on drought first makes itself felt,—

(*a.*) By a rise in the price of all the necessaries of life.

(*b.*) By the demand for labour decreasing below the supply.

This distress is first brought to the notice of the district officers,—

(*a.*) By personal observation.

(*b.*) By perusal of the returns of rain-fall, of the prices current furnished by the different *taluka officers*; of the reports respecting the condition of the people and crops furnished by the same officers, and of the police reports on the subject of crimes, especially dacoities, gang robberies, and thefts.

A district officer might judge whether the distress is due to temporary scarcity by considering the time of the year when such distress takes place. For instance, if it breaks out say in April, he might reasonably conclude that the ordinary break of the south-west monsoon in June would bring down the prices of grain, and would also afford occupation in field work. He would judge whether it was due to local scarcity, by ascertaining the prevailing prices of grain in surrounding and accessible districts.

He would judge whether the distress was likely to be the forerunner of very severe general distress ending in famine,—

(*a.*) By considering the season of the year. If it broke out after a failure of the monsoon rains and during the time when the crops are being or should be harvested, the presumption would be that it would continue increasing until the next harvest came in, unless measures were adopted for mitigating it.

(*b.*) By ascertaining whether similar conditions prevailed in surrounding accessible districts.

To ensure that indications of distress are brought to his notice, the district officer should insist on all his subordinate *taluka* officers moving actively about in their charges, and punctually reporting the condition of the people, prices, &c. He might also invite the opinions of intelligent *inamdars*, landholders, and other natives of position.

The existing district organization is, in my opinion, sufficient to ensure reasonably early and trustworthy reports, I will not say entirely trustworthy reports, because a margin must always be allowed for exaggeration and sensation. I cannot suggest any other measures, nor do I think them requisite.

Mr. Charles.—Distress first shows itself by an increased number of beggars and strangers coming into the larger towns.

The existing organization is quite enough to bring the fact to light if the *Mamlutdars* do their duty, and are constantly warned to report all indications. The question whether the distress will develop into a famine or not depends mostly on the crops of the area from which the district draws its supplies, whether within or without its own borders, and, further, on the condition of the surrounding districts.

Thus if the crops in Bellary and Kaladgi had failed a scarcity in Dharwar would be nearly sure to turn into a famine, because not only would a large part of our supplies go to these districts, but we should also have to feed large bodies of Kaladgi and Bellary people, who would be sure to leave their homes. An inter-

CH. II. QN.

BOMBAY.

change of information between contiguous districts would seem necessary.

Mr. Propert.—On drought becoming apparent, the demand for field labour ceases, and consequently a very large number of persons throughout the country lose their occupations. The grain merchants, who carefully watch the prospects of the season, on the appearance of drought at once raise prices of food in the bazaar. This, of course, quickly affects the poor Musalman population of the towns. Employment and assistance are at once demanded, and the district officials naturally bring the state of affairs to the notice of their superiors.

At the outset no district officer can tell whether the distress is simply due to temporary scarcity. Local limits must of course depend upon circumstances. Experience can alone show the probable result of the distress. If drought commences very early in the season, and no rain falls subsequently, so as to enable sowing operations to proceed, it may safely be inferred that severe distress will ensue.

No special steps are necessary; the district officers are frequently inundated with complaints concerning the prospects of the season when no real cause for anxiety exists. When distress is really imminent there is certainly no chance of information on the subject being in any way withheld.

As before stated, in this part of the country no difficulty whatever is experienced in gaining information concerning scarcity. The village and *taluka* establishments, are quite sufficient for the purpose.

Mr. Norman.—Distress is first brought to the notice of the local officers by crowds of people flocking to the head-quarters of each *taluka* and clamouring for relief. Distress is first caused by a general rise in prices and the absence of the usual field labour, such as weeding, cutting grass, sowing, &c. Local officers can only judge whether distress is likely to be local and temporary or permanent and severe by the accounts received of rainfall in the surrounding districts and provinces. Rain returns are periodically received by Government and published. The existing district organization is ample to ensure early and trustworthy reports.

Mr. Hamilton.—It would not be before all hope of a sufficiency of rain had passed that apprehensions regarding a famine would be felt. If the first S.W. monsoon failed entirely there would be undoubtedly scarcity for a few months, but the later crops might turn out first rate, and in such a case no famine would be feared. I do not think a district officer could fail to observe the first symptoms of a famine in this district. The village officers are constantly attending the taluka head-quarters, and then would report to the *Mamledars* the state of their respective villages, whether sowing operations had commenced, or whether there was distress among the people. Summarised reports are submitted weekly by the *Mamledars* to assistant collectors, so that in any case of doubt no delay need arise in making preparations for meeting temporary distress.

Mr. Moore.—The withdrawal of private charity, and the consequent appearance of beggars, who collect together and must be supported. Then the lowly paid village servants and the poorer class of cultivators and labourers begin to feel uncomfortable, and the latter to wander about in a state of uncertainty, getting into bad condition gradually; for, unless Government provides it, there is no work for them, and food is withheld by those who possess it.

The district officer can judge by the nature of the season whether distress will be local or temporary or general.

The revenue and police subordinate officials would be warned to be on the alert, *Mamlatdars* and chief constables would make daily reports; and on the appearance of any distress village inspection would be organized.

The existing district organization is sufficient to ensure early and trustworthy reports; it is only when distress becomes widespread, and house-to-house visitation is necessary, that extraneous aid is required.

Among the existing district organization I include schoolmasters and sub-registrars and municipal servants.

Mr. Robertson.—Distress consequent on drought first makes itself felt by the rise in the price of food grains, and the absence of employment for the labouring classes.

As we have a *Mamlatdar* or local officer in each *taluka*, and again *patels* and *kulkarnis* in each village, the village officers soon bring to notice the fact that the times are hard. The *Mamlatdar* immediately makes his inquiries, and reports to the assistant collector in charge of a *taluka*. No local scarcity can bring on a famine in the locality in which such scarcity exists, as, thanks to railways and roads, grain would pour in at once.

If the rains should hold off, the local officers (*Mamlatdars* and assistant collectors) will be on the watch. Should the rains hold off so that the *kharif* cannot be sown, or if it prove unfavourable for the growth of the *kharif*, they will expect some difficulty. If the unfavourable season is extended and seriously affects the rabi, then they cannot fail to know that the chances of severe distress are greatly augmented.

The reports regarding the weather and crops are submitted so often to the officer in charge of a *taluka* that he must be blind if he is not well aware of the state of matters.

The present district organization is amply sufficient, in fact I may say perfect, as regards ensuring early and fairly trustworthy reports. There is a natural tendency amongst native officials to be rather alarmists, but an assistant collector knows the man he is dealing with. Further, I am glad I can say that in this presidency an assistant collector, if he had any doubt of the information given him, would at once ride into his *taluka* and see things with his own eyes.

MADRAS.

MADRAS.

Sir W. Robinson.—It would be impossible to devise more certain means of knowing the precise condition of the crops and of the people in every village, than we possess in South India. We have in every village a village establishment; and we get from every village periodical statements of crops, &c., with reference to the Revenue administration.

Wandering is always the first sign of pressure of want in the homes of the poor and it at once indicates deficiency of attention and relief where both are most urgently needed:—namely, in the villages.

Mr. Price.—In an increase in the price of food, and consequent falling off in the quantity procurable.

What I, as a district officer, would take as a sure indication of coming bad times would be a very considerable failure in the crops of the preceding year, followed by failure of the monsoons in the year under consideration. This, with increasing prices and increased demand for employment on the part of the laboring classes, ought to be a sufficient warning to prepare for the worst. The crowding of women and children to works, the sale of ornaments, the falling off in condition of the mass of the people, and the increase in crimes against property, come at a later stage; but they succeed with marvellous rapidity the period when a district officer may definitely declare that famine exists in his charge. I do not think that

there can be any difficulty, if a district officer is fairly on the look out and knows his district, in distinguishing temporary and local distress from what may eventually end in famine.

Local Distress.—I speak now of a district only—can be easily enough dealt with; so can temporary, where for instance there has been a very serious failure of the crops of one season, but it is clear that, unexpected and improbable circumstances excepted, the next will prove good and the period prior to the expected harvest has alone to be tided over. The difficulty is to tell the exact period when temporary distress begins to pass into famine, and when the State should step in with relief measures of an extensive character.

I have no suggestions to make as to the course to ensure that indications of distress are brought to the notice of district officers. I consider, however, that districts and divisions, as a rule, are far too large. The staff of Native subordinates is also too small, and their charges are too extensive to allow of their being readily worked.

Mr. Longley.—Distress is first felt by insufficiency of food resulting from high prices, which is indicated by people supplementing the same with deleterious roots and fruits, which they would not eat as food in ordinary seasons.

The district officer would ascertain this from the monthly price returns received from the taluks and from special reports to be submitted to the collector by the Tahsildars through the divisional officers.

Temporary distress is indicated by the rise of prices consequent on large exports to other districts. Local distress manifests itself by rise in prices caused by a failure of crops in a particular part of the country. The signs of a general severe distress are discovered from (1) the unfavourable prospects of a coming harvest, (2) the state of the stock in hand, (3) the abnormal rise of prices consequent on the above two causes, and (4) the *intense anxiety* of the cultivating classes (small puttadars especially). These indications were all present in December 1876, when a *severe* distress was apprehended.

The submission weekly by Tahsildars to the collector, through his divisional officer, of reports showing (1) the state of crops, (2) the prices of grains, and (3) the condition of the laboring classes, and the frequent visits of the collector and his divisional officers to the taluks to *test the accuracy of the information received* are sufficient. No other measures suggest themselves.

The existing organization is quite sufficient for the purpose, and I have no other measures to propose.

Mr. Webster.—The existing district organization suffices to ensure early and trustworthy reports of rain-fall, cultivation, health of people, and a tolerably fair report of the out-turn of crops. But this information, as I have said above, is not sufficient to enable a fairly accurate forecast to be made. What is needed is an accurate return of the stocks of food-grains in the district at the commencement of each month. Such a return could not, however, be prepared without a large establishment and considerable inquisition. Estimates are made, but they are framed on no sure basis, and must, from the nature of the case, be a mere surmise. The quantity of rail-borne grain imported into, and exported from, the district can easily be obtained, but it would be necessary also to ascertain the imports and exports by land. This would be the greatest difficulty, and would require a considerable establishment. It would not be difficult to ascertain the actual outturn of the crops in a village, though the returns would most probably be under the mark as the ryots would think there was some new form of taxation in view. At present the Curnam prepares the return of outturn on a mere guess. He takes the number of acres cultivated under each crop in his village and calculates the amount of outturn at so much per acre. This will be far from correct, because the rate of yield per acre is arrived at on no fixed principle, and because the lands which, although cultivated, have no crop are not omitted from the calculation. I think that with our comparatively small villages and village establishments to which some addition would, if necessary, be made, and looking to the measurement of the produce as a recognised custom of the country as between landlord and tenant, there would be no difficulty in having all the crops in a village measured. It is doubtless an inquisitional and therefore a somewhat retrograde measure; but I do not think we should compare India with other countries more fully developed, and some such arrangement must, I think, be made. The information thus collected would tell us approximately the monthly out-turn of the district, and an estimate could be formed after a few years of the quantity of grain required for the consumption of the people for a year. We could then, on a failure of the cultivating rains, judge the then state of the stocks, how long they are likely to last, when and to what extent to be supplemented, and could forecast when they would be reduced so low as to materially raise the prices and thus cause distress, and when, if not supplemented, a famine of food.

Mr. J. G. Horsfall.—Distress first makes itself felt among the poorer classes by the diminution in demand for field labour owing to the stoppage of agricultural operations, by their consequent inability to purchase their usual food supplies while prices are doubled, trebled, and even quadrupled the prices in ordinary years. The district officer first of all receives, from his divisional and taluk officers, reports of an unfavourable season, of the withering and loss of crops, of the want of work for the labouring classes, of the failure of pasturage for cattle, and of drinking water for the people. He is inundated with petitions from the ryots praying for remission on account of the loss of crops. There is usually a sudden rise in prices followed by extensive increase in grave crimes, robberies, and dacoities, by panic in the bazaars, and by a marked increase in the number of persons soliciting alms. Ascertaining that high prices are caused by failure of crops, and not by exportation of produce to other districts where distress may previously have arisen, the district officer has then to learn the condition of surrounding districts and the state of the markets throughout the Presidency at least. Should reports from all quarters or from his neighbouring districts be no better than those of his own district, he may reasonably conclude that distress is likely to be general and to be followed by famine modified or intensified accordingly as immediately preceding harvests have or have not been plentiful. A district officer of any experience of his district may miscalculate the extent to which distress may reach, but can never be mistaken as to the sign proclaiming it coming. Famine follows a bad season, and should, with the exercise of ordinary caution and judgment be foreseen six months beforehand.

The existing district organization is sufficient to ensure the district officers being fully informed of indications of coming distress. Indeed, the danger is that they will be magnified and exaggerated, and to check this tendency it should be the district officer's first duty to gather by personal inspection of his district the extent of failure. He should also call for weekly reports from each taluk as to the rain-fall, extent of cultivation, condition of crops, stocks of food grain, prices, extent of demand for labour, movement of people, increase in crime, state of health, disposal of personal and real property including cattle and land, and the direction of trade whether export or import.

Mr. Martin.—A district officer who keeps his eyes on his price lists and on his rain-fall registers ought to have no difficulty in predicting the approach of distress of some sort. It is then his duty to send special orders to his Tahsildars, Deputy Tahsildars, Revenue Inspectors, and superior office establishment to go on tour in different parts of his range, while he should himself take such a tour without delay as will give him a pretty accurate idea of the state of production from

CH. II. QN. 1.

MADRAS.

the last harvest and the anticipations of the people themselves. The reports to be submitted by the subordinate officers should notice the estimated production both as arrived at by the officers themselves and by the accounts given by the village officers; they should state whether many or any of the people showed signs of suffering in their physique, whether they are living on unusual or unfit food, whether they have parted with their property to an unusual extent, and whether any of them who ordinarily do not emigrate have left their villages. If the failure of crops appears by general report to be very general and of a high per-centage coupled with high prices and a deficient or badly-distributed rain-fall, and above all if the wells are very low when they ought to be full or nearly so, then such indications of distress as I have noticed will probably mean twelve months' famine if it occurs in the Madura District at the close of the north-east monsoon, particularly if neighbouring districts are similarly affected. If such indications occur at the close of the south-west monsoon, the distress has a much shorter time to run until the arrival of the north-east monsoon rains, and in the first year of distress it will not be severe, because there will still be the grain grown in the previous north-east monsoon, constituting the great bulk of the food-supply, to prevent the markets running very short.

I consider that the existing district organisation here is sufficient to ensure early and trustworthy reports, if the ordinary office-work beyond what is absolutely necessary be postponed, and the divisional establishment be freely deputed on tour in different directions.

Mr. Cook.—If district officers be constantly on the move, the present organization would, I think, suffice for early and trustworthy reports; but it is very essential that a district officer should move about when distress is imminent, for Tahsildars (owing to their multifarious duties) and others are either inclined to be apathetic, as they hate the trouble of famine duty and thus conceal real facts, or else they are over-frightened and exaggerate the true state of things.

Lieutenant-Colonel Hasted.—Work rates remaining the same while the price of food is increasing, ordinary labor, such as tank diggers, as prices increase, forsakes the scattered works in the villages, and flocks to works in the neighbourhood of towns and large bazaars, and then migrates to more favored districts, where food is cheaper. Small cultivators, cultivators' servants, and low-caste people (Malas) who do not usually work under Department of Public Works, will then come on works, and later on ryots of a better class. If the scarcity is temporary or local, the tank-diggers will leave the distressed part, but the other classes will not; if famine is to be anticipated, all classes will begin to move to where food is more plentiful.

MYSORE.

MYSORE.

Mr. Ricketts.—By high price of grain and less of it coming into rural towns and markets for sale. The district officer has in great measure been forewarned of this by his own observations and by the reports of assistants and amildars, added to the communications of unofficial natives whose thoughts, conversation, and even correspondence run much upon crop prospects and prices. Temporary or local scarcity would be produced by failure, more or less, of crop in a limited area, and where the sufferers would mostly be relieved by going to their friends or relatives or to well-to-do employers in other places, or getting direct help from them, and there would only be a small residuum to be helped by some relief work. But where the area affected by drought is large, the knowledge of the impending distress is soon brought to the ken of all. The poor can find no private employment, nor can they get those money advances which are readily obtainable at other times in return for their labour. As the crops go on failing or withering, the straw is sold for present maintenance without regard to the future. Then fowls are sold at any obtainable price, and after that cattle, and then ornaments. These indications of a regular famine occurred in this district so early as the latter part of the year 1876, and then in the beginning of 1877, when all available resources were disposed of, began the wandering of the poor.

CH. II. QN. 2.

QUESTION 2.—CLASSES OF THE RURAL POPULATION FIRST AFFECTED.

Which classes of the rural population are first affected by serious failure of crops likely to produce famine? In what way are they affected, and how is the effect manifested? Do the early applicants for relief consist of whole families or of isolated individuals? Are all sexes and ages equally represented, or do women and children preponderate among them? So far as the applicants are field labourers deprived of employment, does this arise because the employers have no money or grain to spend on wages, or because there is nothing to do in the fields?

Punjab.—7 officers have answered. The replies are of the same effect as above. Women and children form the bulk of the first applicants for relief.

North-Western Provinces.—33 officers have answered the question. The opinions expressed are similar to those from Bombay. The women and children come first for relief, the men still finding, or hoping to find, employment at home.

Bengal.—21 officers have answered. The majority think that the agricultural labourers are first affected and village artizans, and that women and children first come on relief.

Bombay.—12 officers have answered the question. The substance of their answers is—

The classes first affected are: (1) beggars, (2) the lower village servants and artizans who receive payment in kind, (3) the labourers for wages, (4) the poorer cultivators. They are affected thus: charity ceases, and then field labour. The women and children apply first for relief. Field labourers suffer because there is nothing to do in the fields.

Madras.—21 European and 5 Native gentlemen have replied to this question.

The classes of the rural population first affected by serious failure of crops are said to be (1) the agricultural labourers; (2) the petty landholders; (3) handicraftsmen; (4) beggars and persons more or less dependent on private charity. The first are thrown out of employment; the second are deprived of their ordinary means of subsistence; the third find less demand for the product of their industry; and as regards the fourth, the surplus of which in good seasons they are participators has no existence when harvests

fail. In the earlier stages of distress applicants for relief rarely come in family groups. Women and children preponderate over the adult male element. The failure of employment for the labouring classes is said to be due in the earlier stages of distress more to the suspension of agricultural operations consequent on drought than to the want of means on the part of employers.

PUNJAB.

Muhammad Hayat Khan.—The distress is first felt among the poorer classes of agriculturists who own little or no land, and have a large family to support, and who are already indebted to the village bankers, and always pay their revenue by borrowing money from them and who at the harvest time make over their grain to the village bankers in payment of their debt. These people suffer on the first approach of scarcity; they cannot obtain any loan of money for the purchase of food, seed, or cattle, and are obliged, when pressed by hunger, to sell their household goods, not even excepting the timber of the roof of their house. When all resources are exhausted, they leave their home with their family in search of employment. The able-bodied among them obtain their livelihood by working as labourers, while the infirm and children go to large towns for the purpose of begging. They do not, as a rule, move in a body, but get themselves dispersed in the country. Besides the poorer classes of agriculturists, the lower orders of the working population, such as *Churás*, *Dúmnás*, *Jollahá*, *Mochí*,* also suffer on the first outbreak of the distress. These people entirely depend on the cultivators for their maintenance, and it is natural that when the latter are unable to provide for themselves, the menial labourers and artizans must, as a matter of course, suffer. In last year's scarcity, when the price of food grain rose very high, they left their villages in large numbers. The sweepers generally took to thieving, and satisfied their hunger by eating stolen cattle. Relief works on a small scale were opened for them in different localities, and they with their women and children were employed in them, while those who were unable to work received gratuitous relief. In this manner a considerable number of them were relieved of their distress. The effect of distress manifested by the different classes of rural population was not always the same. The lower order of working men, who generally obtained their livelihood from the tillers of the soil, left their village with their wives and children on the first appearance of the distress; but the cultivators were slow in applying for relief; they stood manfully till their last resource had been exhausted, when no work was left to them in their fields, and when they could not obtain any loan of money or grain from their bankers; in short, when reduced to the last extremity, they (only the male sex) left the village in search of employment. They supported themselves and their family with their earnings, but when the distress became severe their women and children also left their homes. They did not go out in a body, but dispersed themselves in different directions, each seeking for his or her bread. In time of distress the owners of land, with a view of economy, dispense with the necessity of hired labour and work for themselves. This is another reason why the poorer classes of cultivators and labourers are thrown out of employment on the first approach of scarcity. When they do not find any work at home they roam about in the country in search of employment. These men can be most profitably employed on earth-work.

Captain Wood.—The resources of the district have not, however, been taxed by the temporary distress I have noticed. We have had, and have still, to deal with a much more numerous and difficult class, *viz.*, immigrants from Kashmir and Poonch.

It is unnecessary here to describe the deplorable state of the people of these territories, for this is already well known to Government.

Notwithstanding the prohibition of emigration by the Kashmir and Poonch authorities, numbers of famine-stricken Kashmiris have found their way into this district; and these are the people to whom my remarks will specially refer.

These refugees are for the most part of the labouring class, who in favourable seasons earn sufficient for their sustenance, but who owned little or no land in their own country. The complete failure of the last *kharíf* (chiefly maize and rice) threw these unfortunates out of employment; and in the early part of this year they were found in hundreds in and about Murree in a state of the most utter destitution. These were mostly women and children, lads under 15, and infirm old men.

I am informed that the present *kharíf* is favourable, but that so many of the labouring hands have died and disappeared that the rice crop will probably be only ¼th of what it ought to be, from want of hands to weed and tend it.

Lieutenant-Colonel Parsons.—(*a.*)—The village menial classes are first affected by a serious failure of crops owing to their being the poorest, and living a hand-to-mouth existence; next to these the cultivators and petty landholders.

(*b.*)—Applicants for relief are usually accompanied with their families. (*c.*)—Women and children somewhat preponderate in quest of relief. (*d.*)—When there is failure of crops there is no work for the field labourers, nor wages to pay them, as the wages are paid in kind out of the reaped harvests.

Mr. Coldstream.—The classes of the rural population which are *first* affected by serious failure of crops are the numerous village menials and handicraftsmen, such as weavers, sweepers, tanners, potters, and carpenters. These classes in villages of North India are dependent for their subsistence upon the cultivating proprietors of the village, and that subsistence is usually paid to them in grain, and not in cash. When drought has occurred, and stocks of grain run low in the houses of proprietors, the means of subsistence of these classes is wholly or partially withdrawn.

All sexes and ages suffer equally, and the first suffering is not because there is nothing to do in the fields; but because the proprietors have little or no grain in which to make the usual payments to the village menials (*kamíns*).

Mr. Roberts.—The classes who first feel the pressure are village servants and agricultural labourers, who are never able to make provision for the future, but are paid by a per-centage of grain at harvest time, or else are supplied by the proprietors through the dull season of each year, on condition of giving their labour when required. Distress next falls upon small landholders, whose crops are generally mortgaged to the baniáh for advances, and who are supplied by him with food at *bazár* rates to support them while the crop is coming on. As soon as the *baniáh* perceives that the crop is likely to fail, he stops his supplies, or gives them on progressively harder terms, and he is able at any moment to reduce his customers to the point of starvation. Such small proprietors, living in this precarious way, are very numerous, especially throughout the country, while agriculturists who have a stock in hand for future contingencies are quite the exception. Able-bodied labourers, without children, generally leave the villages of their own accord, and get employment wherever large earth-works are in progress; but proprietors are always

* These men suffer first of all. H. P.

Ch II Qs. 2.
PUNJAB

anxious to retain them at home as long as possible, so as not to lose their services when required; and to this end they supply them with food as far as their means go. Those having wives and children cannot easily be induced to leave their villages even when the pressure of famine has been severe, and these soon become too weak and emaciated for any sort of labour. Among the applicants for relief, women, children, and aged men largely preponderate. Distress among field labourers results partly from the impoverishment of their employers, who, as I have said, oppose emigration, and support their labourers as long as they can, and partly from the failure of field work.

Mr. Benton.—I can corroborate what the Honorary Assistant Commissioner of Kaithal says, that low caste people, such as Chúras and Chamárs, are the first to feel the pinch. During the latter part of the month of July last I observed whole families of these people moving along the grand trunk road in the direction of Umballa, a great many of them much emaciated by want of food. I put questions to numbers of them, and found that they had come from Gurgaon, Rájwára, *i.e.*, Rájputána, Agra, &c., and were going towards the Punjab, because they had heard there had been rain there. The Churas preponderated. These people live, a great many of them, by doing jobs for landholders or taking service with them. When famine comes there is no work to be done, and no service to be had, and they must leave for some other part where they can get work, or starve. The case of these people, the common serfs of the village, is different from that of the agricultural castes. Only lately I observed that a good many Játs and other agriculturists from Rohtak and neighbouring districts, on account of the distress, had taken refuge in the canal villages by working for some one of their own caste for subsistence only. A Chamár or Chúra would not meet with similar assistance from his caste people.

The wanderers I have spoken of consisted of whole families, people old and infirm, able-bodied, and infants in arms.

NORTH-WESTERN PROVINCES AND OUDH.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Sells.—As far as my experience goes, I should say that *women* and *children* preponderate amongst the first applicants for relief—those, in fact, who are dependent upon their own labour, widows and their children, and orphan children, who may have lived mainly on charity, which is now denied them.

Mr. A. Colvin.—*Chamárs* and weavers. There is no demand for their labour, and the effect is manifest by their leaving their homes and beginning to roam the country. The early applicants for relief are of both kinds. At first men in this district predominated. Both want of labour fund and absence of demand for their labour combine, but in the early stages of famine the latter chiefly.

Mr. Sandys.—The field labourers among the rural population, being chiefly *juláhas, korís,* and *chamárs,* and also the infirm and habitual mendicants, are the first affected; they can get no employment or charity near their villages, and are consequently thrown out of work or left without food; and whole families as well as single individuals take to begging and wander about and crowd the towns, and soon become very importunate in their demands for food. Women and children preponderate.

The field labourers are deprived of employment, as there is nothing for them to do in the fields. When there is no drought their employers have money and grain to spend on their wages; when prices are high and prospects uncertain many of the employers do themselves the work that in ordinary years would be done for them by hired labourers.

Mr. Tracy.—Ploughmen and other day labourers and their families are the first of the rural population to suffer. The stoppage of field work leaves them utterly destitute. They leave their homes, and beg or crowd to relief works if any are open. The first applicants for relief are generally men. They are followed by their families. Until the distress becomes severe, men preponderate; subsequently all sexes and ages are equally represented. The main cause of the distress of field labourers is that their usual employers have no work for them and turn them adrift.

Mr. Mellor.—The agricultural labourers who do not possess lands of their own no doubt are the first sufferers. When there is temporary distress only, and where there is work to be got in the fields (which were the conditions prevailing very soon after relief works were re-opened here in June last), the women and children largely preponderated among the applicants for relief. This was to a certain extent to be expected, as the field work which the rains called into operation, *viz.*, ploughing and sowing, could only be done by the men, and the men therefore stayed at their villages and sent their families to the relief works; but how far the excessive number of women and children on the works is due to the order of Government insisting on a minimum wage being paid to all it is difficult to say.

Mr. Kennedy.—Beggars, unprovided widows, and the criminal classes, all of whom are habitually bordering on starvation, are perhaps the first to feel the pinch of hunger. The beggars begin to wander over the country and crowd into towns, unprovided widows begin to beg openly in the villages, and petty thieves display fresh activity. The delay of the rains for three or four weeks is sufficient to bring this about, but the first symptom of general distress consists in the migration of the field labourers in search of employment.

In 1877 this migration began about the end of July. Individuals first, and then whole families wandered about the country, but hunger and demoralization soon began to dissolve the ties of family or caste, and single individuals wandered about in an automatic fashion incapable of either resolution or thought. To this movement was soon added the class of petty cultivators scarcely above the field labourers in condition.

Mr. Leeds.—The class of agricultural labourers is the first affected, the reason being that the demand for their labour is greatly restricted, and further, that with their scanty means they are unable to procure sufficient food at the enhanced prices.

The early applicants for relief consist very generally of isolated individuals, women and children preponderating.

Field labourers are driven to apply for relief from a combination of both the causes mentioned; there is not only less demand for their labour in cases where it would ordinarily have been employed, but very much less work to be done in the fields by anyone.

Mr. Lawrence.—Day labourers, the poorer handicraftsmen (such as weavers, potters, and cobblers), and tenants without right of occupancy, are the first to be affected.

In ordinary years the labouring classes are employed as reapers, and get as their daily wages a bundle of corn yielding from four to seven seers of grain. When the crops fail, the cultivators, in order to save a few maunds of grain, do what reaping there is to do with the help of their families, or if they employ labourers,

give them little more than suffices for a day's subsistence.

Ordinary handicraftsmen, such as potters, washermen, carpenters, receive at harvest time certain dues of grain. These are cut down when the harvest is short.

Early applicants for relief consist at first of isolated individuals, and afterwards of whole families, women and children preponderating.

Field labourers are deprived of employment partly because the employers want all the grain for themselves, and partly because the harvest is so light that it can be got in by the cultivator and his family.

Mr. Cornwall.—The rural population first affected by a failure of the crops are the poor non-agriculturists, by whose labour the agricultural classes are supplied with what in ordinary seasons are looked on as necessaries, and in hard times luxuries. After them the agricultural labourers feel it. The cultivator can no longer afford to keep them supplied with food; if he is fortunate enough to have a crop, he attends to it, and weeds his fields himself, carrying home the weedings for his cattle; and if he has not, he goes out to cut grass or canes for them. These men are consequently driven to seek a livelihood away from their villages, and every main road shows, all along its length at such times, scattered parties of two or three, each with his load of grass for sale to the drivers of passing carts; and grass at the usual resting places being insufficient to meet all demands, these loads meet with a ready sale. A subsistence is to a certain extent derived in this manner, but the food thus obtained is insufficient, even when eked out with roots and berries, to keep off hunger. On a relief work being opened these people flock to it.

At first a relief work is attended generally by isolated individuals, and the women and children come afterwards, and usually their numbers preponderate. But there seem to be local circumstances which are liable to overthrow all calculations; for instance large numbers of people last year from the Etáwah district passed through the south of this district on their way to Málwa, their only reason for going there being a tradition that a similar migration took place in the famine of 1837–38. Large numbers of these came from the same village; and though none stayed at the relief work then open on the very border of this district, they may, if pressed by hunger, have applied for relief at a later stage of their journey, and so large gangs consisting of several families may come for relief at once. These people leave their villages quite suddenly and without any settled plan in many instances, intending to settle where they can find fodder for their cattle and get land to cultivate themselves; and any mishap, such as the death or increasing weakness of their cattle, or their own inability to trudge further, may throw them upon relief works. So far as the applicants for relief are field labourers, their application is due to both the causes mentioned. What little work there is to be done in the fields the cultivators do themselves, and the zemindars turn off all field labourers that they can possibly do without, if they are unable to support them. Last year, so far as the zemindars had it in their power they assisted their poorer neighbours with grain; and at these seasons, the wealthy *mahájan*, even though at other times he may be deemed a hard landlord in exacting higher rents than his neighbours, keeps his village better in hand and his tenantry more contented than the penniless *Thákur* community of the next village.

Mr. Webster.—The applicants at relief works are in the early stages of distress chiefly women and children sent there by their husbands; but very soon after the works are open, if pressure continue, the men come in too, and the sexes are pretty equally represented. (This is the result of my personal observation, and I do not generalize on it, knowing it to be far too narrow to carry a theory; but the question was asked and had to be answered.)

Both causes—want of ability to pay wages on the part of employers and want of anything to do in the field—combine to deprive day labourers of employment.

Mr. Stoker.—A proprietor will support and keep together his people as long as he can. He has to do something of the sort in the best of years. In those parts, therefore, I should regard the appearance of unemployed and destitute masses as symptomatic of very severe distress. Again, from the harvesting of the rabi crop till the rains there is comparatively little to be done in the fields. Very large numbers will be found at that time to flock to almost any employment which may be afforded at almost any rates which may be offered, and such a phenomenon does not necessarily mean famine. This was one of the most conspicuous facts to be noticed in Gorakhpur in 1874.

If the distress be severe and general all sexes and ages are fairly represented in their actual proportions. I should consider it a favourable sign to find an undue preponderance of women and children. It would mean that there was still some occupation and subsistence for the men—that it was only the distress of short rations, not of total want—and analogously as the famine ends the women and children linger after the men have abandoned Government relief.

Colonel Reid.—The classes first affected by serious failure of crops are old and infirm persons dependent on their relatives, low-caste field labourers for hire; also artizans, weavers, and professional beggars. Field labourers are affected by loss of employment, arising both from there being nothing to do, and from employers having no money or grain to spare to spend on wages, and consequently doing themselves what in better times they would hire labourers to do for them. One of the first indications of distress is a spirit of restlessness among the sufferers; they have no special ties to bind them to their villages, and move off, both as individuals and in families, to other districts and great cities in search of employment. Husbands frequently desert their wives and families, and women and children decidedly preponderate among the applicants for relief. Children at the breast are the greatest sufferers, and of these numbers die.

Ordinary cultivators as a class somehow manage to pull through one season of severe distress, and, unless their bullocks die (which unfortunately they often do), are able, with more or less assistance from their *zamindars* or village *mahájans*, to resume their cultivation when prospects improve, though a portion of them, varying according to circumstances, sink for a time, if not permanently, to their position of labourers for hire.

Mr. Blennerhasset.—It would appear that on first feeling distress the male members of a family wander about in search of employment, leaving the women and children at home. Women and children usually predominate on all Government relief works, many of the women being unable to state what has become of their husbands. Occasionally a whole family put their property into a basket and wander about together.

Mr. Barlow.—The class of the rural population first affected by serious failure of crops in this part of the country is the agricultural labourers, comprising Mussahirs, Kallan, Dhanooks, Jalahers, &c. These have little or no land of their own, no cattle, and no ploughs. They work for hire and get their wages in money or kind. These people live from hand to mouth. The harvest time is their season, when they are paid so many bundles in proportion to the crop cut, and they are thus able to lay by a little store, which lasts them for a few months, while work is slack. It is obvious that any failure of the crop promptly tells upon these people, for it takes away their work and subsistence at once. In hard times the expense of labour would be avoided as far as possible, and work done would probably be paid for inadequately.

Mr. Worsley.—The classes which are first affected by serious failure of crops likely to produce famine are musahars, nunyas, weavers, kahars, and generally those classes which live for eight months of the year on manual labour, and earn their livelihood during the remaining four months by reaping crops. Wages being paid in sheaves of corn at harvest time, these classes are at once affected in two ways by a failure of harvest—(1) they are employed for a shorter term than usual; (2) the proportion of grain to stalk which they extract from the sheaves is smaller than usual. The consequence is that the labourers are unable to make their usual savings from their wages, and sooner or later their supplies fail. By reducing their daily consumption of food, and by resorting to unwholesome herbs and roots, they postpone extreme want for a time, but day by day they lose strength and their bodies become thin and emaciated. During this stage an active district officer cannot fail to observe the coming on of distress. In every village which he passes empty sheaves are held out before him, and the villagers complain of their losses and point to the deteriorating condition of the poorest members of their community. The early applicants for relief consist of isolated individuals, and women and children preponderate among them. So far as the applicants are field labourers, deprived of employment, this arises because there is nothing to do in the fields, and because they are without their usual reserve of food.

Mr. Magrath.—The first persons touched are the labourers who hold no lands themselves but work for hire. When the crop fails to come up, or is destroyed, there is no work of weeding, transplantiug, reaping, &c. They consequently receive no grain (payments in kind being general), their store from the previous crop is soon exhausted, they cannot borrow money to purchase for they have no security to give, and therefore, unless there are local works going on where they can obtain employment they must starve. This was the case with the musahars in Madhubanni. Another class that suffers earliest is the village artizans who do not happen to have land. Most of them it is true have, but in 1874 we found that the village sonars in Madhubanni in very many cases held no land and were very badly off; the *tantees*, too, being generally landless and poor were very early amongst the applicants for relief.

In the beginning of scarcity the males sell their brass utensils and furniture or pledge them, and leaving the proceeds with the women set out in search of work, either sending for their families when they find work, or sending them back money, generally the former. When the scarcity becomes general the whole family moves together. I have always found the men largely in excess of the women and children. The only class of women who come for relief without a proportion of men are the childless widows, who support themselves during times of plenty by going from house to house husking dhan and grinding atta, receiving remuneration in kind for their work. The field labourers first become impoverished because there is no work to do in their fields. Later on their employers often have no money or grain to advance them if they desire to do so.

Mr. Hodgkinson.—The labouring population, which I have described in my answer to question 2, is the first to feel a serious failure of the crops. The way in which the different classes of society are affected has been well described by Mr. Cockerell (*vide* page 367, administrative experience of former famines). My experience has been that, when relief works are opened, women and children predominate among the comers. The men of the family usually find labour in the fields for a time at any rate; and during an agricultural season I should regard the appearance of a large proportion of men at the relief works (unless indeed the famine had reached a very advanced stage) as a pretty sure sign that they were too attractive, and being carried on to the detriment of the country. The deprivation of employment induced by the class of field labourers arises generally from the restriction employers have to place on this expenditure, and only, rarely, as for instance, in May and June when no rain falls, because there is nothing to do in the fields.

Mr. Mackie.—The classes of the rural population first affected by serious failure of crops are the coolies who perform the actual work of cultivation, who possess no land, and have saved nothing. It being impossible for the ryots to give them ordinary field work, it naturally follows that having nothing to fall back on either in the shape of land, which they could mortgage, or in money saved, they are the first to feel the pinch. I should say women and children largely preponderated among early applicants for relief, for not only have most men some such dependent on them, but cases of desertion are very frequent. As regards the second part of this question, I should say that distress arose because there is nothing to do in the fields, and not because the ryots have no money or grain to spend on wages. I doubt whether the ryots do not almost always have large stores of grain concealed, for every village fire that I have witnessed either in Nellore or Tirhoot, disclosed very large stores, the existence of which had been strenuously denied by every villager.

Mr. Henry.—Of the rural population the following classes would be the first to be affected by the failure of crops :—

1st. Daily labourers tilling no land of their own.

2nd. Cultivators with small holdings.

3rd. Farm servants permanently entertained by the well-to-do cultivators.

Where there has been failure of the crops the employment of labour for reaping the harvest will be less in proportion to the extent of this failure.

In this district one sheaf in every 10 is allotted to the reaper. In other words, a wage fund, equivalent to 10 per cent. of the harvest out-turn, is available for the employment of labour. Consequent on failure of the crops the harvest out-turn is less, and the wage fund is proportionately diminished; the first therefore to feel the effects are the expectant reapers, amongst whom the daily labourers largely predominate.

In ordinary years cultivators with small holdings are able, to store, after paying landlords and mahajans, just sufficient to keep them during the winter harvest period before the next crop.

In bad years this out-turn is below the average and the residue they have for storage is insufficient for their food during the whole inter-harvest period. The time when they begin to experience scarcity is nearer or more remote, as the failure of the crops has been more or less serious.

In very bad years the more substantial cultivators

find that their surplus is insufficient for the wants of their households. For self-preservation they are forced to practise economy by dismissing some of their farm servants. This rarely occurs I believe, the servants being so bound up with their master's interests that the latter will make considerable sacrifices to retain them; but still it does occasionally occur.

The farm servants, deprived of the daily food they had hitherto received swell the number of those seeking employment. The district officer who, from other indications, will have already made a forecast of the conditions of the people, is not unprepared for the applications for relief which will now be made to him.

So far as my experience goes, early applicants for relief are isolated individuals; numerically men one in excess of women, and the latter much in excess of children.

As already stated, the first immediate cause of distress is the smallness of the harvest; there is less grain to spend on wages, because there is less work to be done. Later on, employers having no surplus grain or money employ no labour.

The experience gained from the famine of 1874 shows that, as soon as the time for agricultural operations comes round, there is a sufficient wage fund available, even during a period of great distress.

With the setting in of the periodical rains in Tirhoot in the summer of 1874, thousands and tens of thousands left our relief works to return to their villages.

Mr. Metcalfe.—The earliest applicants for relief are chiefly aged or middle aged women of the lower castes with children, who preponderate among the earlier applicants.

Mr. Kirkwood.—I believe women and children to form the majority of the earlier applicants for relief. That this should be so in the lower classes, when they have no adult male relative on whom to depend, is easily conceivable. When in the lower labouring classes they have such male relatives it often forms one of the first measures taken by the head of the house for weathering the storm to get the children and then the women supported, while he tries to earn something somehow for the maintenance of himself and such of his family as cannot be sent forth to beg.

Mr. Brookes.—The ordinary agricultural labourers and their families, whose employment depended on the prosperous condition of the growing crops, are generally the first to suffer. This is manifested by unusual numbers of women and children to be seen collecting tank weeds, roots and seeds of grasses, and other substitutes for the grain they have no longer the means to purchase or the credit to obtain without payment. They seldom at the first stage of distress resort to begging.

The early applicants for relief consist more frequently of women and children; later on all ages and sexes are equally represented.

Field labourers out of employment are mostly so because work in the fields is not required, and seldom for the want of money or grain.

Mr. Abbott.—The regular mendicants and the poorer class of cultivators suffer considerably more than the mere labouring classes, for whom the indigo factories and other industries and trades generally have employment sufficient to prevent actual distress during first stages of famine. To a planter one of the first signs of hard times is the noticeable increase of women coming to field work. The labouring coolie seldom applies for relief before Government has itself seen the necessity of helping him. The cultivating ryots, unable with the prospects of a poor harvest to raise money from the village *mahajun*, are forced to do without hired labour what field work they may have; hence the coolie must turn to the larger capitalists and industries alone for maintenance.

The *Bawan* and other Hindoo petty cultivators suffer most, for they will neither beg nor work for others until very badly pressed. Every *zamindar* or *ticcadar* in the district should, when famine appears inevitable, be called upon to furnish an estimate showing the amount of loan necessary to keep off actual distress from each family of this sort living on his property; and himself conjointly with his tenant be held responsible for the future repayment of the advance, the land and property, moveable and immoveable of both, being mortgaged to Government as security.

CENTRAL PROVINCES.

Mr. Nicholls.—Experience has shown that in Chhattisgarh the agricultural labourers and the lower ranks of the cultivators are the first to suffer.

In the rest of the province (putting aside the mendicants) we have seen that the spinning and coarse-cloth weaving classes, especially those who for a part of the year engage in field work, are the first to suffer.

In Chhattisgarh these agricultural classes have no other occupation and now no field work to do, no credit and no resources.

Among the spinning and weaving classes, the people will be disappointed and losers by not getting the expected cash payments for labour in the fields. The ordinary demand for their coarse produce would not provide for them during these weeks in their spinning and weaving occupations, and they become unremunerative consumers of food. In addition to this, the normal demand for thread and coarse cloths, ordinarily at this season too small to employ them, will rapidly contract as the prospects of the season grow more gloomy and as food grows dearer. Generally agricultural labourers would be reduced to distress, only in cases where employers could find no work, even at a loss to themselves, on which to give employment.

In regard to the early applicants for relief, their sex, age, &c., my experience is not wide or recent enough to enable me to answer decidedly. In Jubbulpore in 1869, many men seemed to have gone away to earn money on the railway works in the Nerbudda Valley, leaving their women and children to struggle on or to be supported by us. In Dinagepore, where we kept ahead of famine, the village headmen, mandals, and others, used to give us warning when the people in any particular tract were likely to break down without relief by employment. There will in these provinces be begging by classes who are generally independent, by men, women, and children, long before any applications for Government inteference are made. And I should expect first of all not the applications of individual sufferers, but recommendations for the giving of employment, coming from the leading malguzars and municipal committees, by the tahsildars and police officers.

Mr. Spry.—The smaller cultivators and the day labourers are the first among the rural population affected by serious failure of crops. The former are entirely dependent on their annual crops, and therefore the loss to them is immediately manifest. The latter are unable to get the daily labour on which they depend. Further, the drought would probably have killed all the green grass growing in fields, and therefore these day labourers would be unable to get a livelihood by gathering and selling that in the bazaars.

The effect is manifested by increased application for employment.

The beggars, who generally subsist on charity, are I think the first applicants for relief, as they find that charity drying up. Then will come the able-bodied labourers, &c., and if there is a chance of getting work close at hand, they will come in families so that all may get put on. When they come thus there is of course the usual proportion of women and children. Often, however, a man who can himself pick up work will send his family.

In this district I take it that the want of employment during the earlier stages of the last famine arose from there being nothing to do in the fields. Employers locked up their capital as all expenditure would be unremunerative.

Mr. Charles.—Beggars of all kinds and day labourers are the first to feel the effects of serious failure of crops. The dole of handfuls of grain to beggars is put a stop to as soon as people fear their stocks may run out, and no labourers are employed in weeding when the *ryots* see reason to think the labour would be in vain. The early applicants for relief are more often isolated individuals, each family sending away such members as can be spared from the house.

Men chiefly seem to come at first, but I cannot say I observed any definite custom.

Field labourers come on the works because there is nothing to do in the fields. If one year's crop has been sown but does not come up there is nothing that can be done till next cultivating season comes round, and all the work the field labourer has usually, in weeding, hoeing, watching crops, and in reaping, is entirely stopped.

Mr. Propert.—Agricultural labourers and inferior cultivators, as well as the village artizans, &c., who are dependent for their livelihood on the cultivating classes.

Field labour ceases, and the labourers cannot get employment. Artizans fail to obtain their grain allowances from the cultivators. *Saukars* at once refuse supplies of money or grain, and the poorer classes commence wandering in search of work. The authorities are besieged with applications for relief, and work has to be provided.

As a rule the earliest applicants consist of individuals, except in the case of Bhils and such wild classes who proceed with their wives and children to the nearest official, clamouring for work or relief.

I have noticed that, amongst those who merely wander for the purpose of begging, women and children preponderate. The males generally ask for employment.

Field labourers are deprived of employment simply because there is no work in the fields. If there were any work at all employers would not turn off their labourers, but would retain them even at reduced wages.

Mr. Ramsay.—So far as I have seen, coming distress is first manifested by a large increase among the begging class, mostly old, sickly, and infirm persons. Next labourers and others depending on doles at harvest time begin to clamour for food or employment, but no doubt a great deal of distress is endured before it comes to light. When distress arises from failure of rains, it is of course chiefly owing to want of work in the fields, high prices, and scarcity of grain in the houses of the people, and the stoppage in consequence of petty charities and doles of grain, upon which so many old and infirm persons depend. The closing of the labour market is of course the chief cause of distress, as labourers have no credit on which to borrow or buy.

Mr. Norman.—The classes of the rural population first affected are the lowest castes, comprising *Mhars*, *Mhangs*, and to a lesser degree, *Ramoshis* and the poorer classes of *Kunbis* who are without lands of their own, and usually subsist by day labour. These are affected by a stoppage in the demand for labour and by a general rise in prices. The early applicants for relief consist chiefly of women and children, accompanied by those who are too old to work. Occasionally whole families present themselves. Field labourers are deprived of employment, because there is nothing for them to do in the fields.

Mr. Hamilton.—The people first affected appear to be labourers who earn their livelihood by weeding the fields after the young crops have appeared. With them are the lower village servants, who receive payment in kind from the villagers in return for various offices performed, such as watching the fields at night, &c. If no steps were then taken to open relief works these people would emigrate in search of work to places where they heard good rain had fallen, but village servants generally remain in their villages much longer than mere labourers. These latter have no claim on cultivators who have no crops to be tended. Women and young children seem to be the first to clamour for relief.

Mr. Moore.—I have answered the first and second questions in the paragraph above.

The early applicants are isolated individuals, but if there has been a serious failure, mothers and children appear, the men having gone in search of labour.

Because there is nothing to do in the fields, and because those who have money and grain hold both back.

Mr. Robertson.—(*a.*) First the professional beggars.

(*b.*) Next the *Mhars* and *Mangs*.

(*c.*) Then the agricultural wage labourer.

(*d.*) Then the less well-to-do cultivators and all the poorer classes who live by wage, but owing to dear prices do not obtain employment. Employers of labour at such times become careful to curtail all expenses.

They are affected—

(*a.*) By getting less from charity.

(*b.*) By the cultivators who generally aid and employ these people in some way, refusing to give them grain.

(*c.*) By their being unable, owing to cessation of field labour, to obtain employment and earn money to buy food.

(*d.*) The poor cultivators, owing to their being generally in debt, to their having no stocks of grain for home use and thus being reduced to want. The poorer classes generally, owing to there being no employment, and thus being unable to earn money to buy food.

Early applicants for relief generally consist of parts of families. Women and children preponderate, but not very greatly.

So far as the applicants are field labourers deprived of employment, this arises chiefly—in fact, almost entirely—because there is nothing to do in the fields.

MADRAS.

Mr. Whiteside.—Petty landholders are the first to feel severely the effects of a general failure in crops. They do not usually work themselves, but superintend the cultivation of their little holdings by a few pariahs or people of other low caste, whom they employ on small monthly wages, usually paid in grain. When these people's crops fail, and there is a general rise in prices, they dismiss their workmen (who for some time will be able to find employment in other ways sufficient to support themselves) and reduce their expenditure to the lowest point. If the scarcity continues and their stocks of grain become exhausted, they then sell their cattle, reserving the ploughing bullocks as long as possible. Afterwards their little hoards of money are fallen back upon, and then the jewels of the family, after which the brass and bell-metal household utensils are sent to the pawnbroker, and finally lands and houses are mortgaged or sold.

Whole families do not at first appear in search of subsistence. The older members of a family begin to go out and beg. The adult males then wander away in search of employment, and it is not until the famine is thoroughly established that entire families will quit their homes and go to any distance. During the famine, the numbers of women and children largely preponderated often to such an extent as to cause much inconvenience. The men, in many cases, stand about the villages, looking after cattle, doing scanty jobs of work, and always on the look-out for any casual fall of rain that would enable them to begin to cultivate. Throughout the famine it was a notable fact that, after every good fall of rain, the numbers of adult males on the relief works fell off at once, and the men hastened to their villages to see what could be done in the fields.

Mr. A. McC. Webster.—The agricultural labourers, petty artisans, weavers, and the smaller class of ryots.

The ryots are affected by the loss of their crops on which they depend for their support, and the balance of which is sold to pay the Government revenue; the petty artizans and weavers are affected by the slackness of trade owing to high prices and consequent necessity of the people to spend what they have in supporting life; and the agricultural labourers are affected (and sooner than the others) by want of demand for labor in the fields owing to there having been no cultivation operations (ploughing, sowing, and weeding), to there being no demand for harvest labour, and to the ryot's inability to pay for labour. The habitual beggars also are affected very early in the day by the cessation of charitable relief owing to the inability of the people to look after others than themselves.

The effect is manifested in the distressed people wandering, in the increase of beggars, and in the people eating the fruit of the prickly-pear plants and the seeds of grasses and trees, also by a general backwardness of collections and by the sale of jewelry, cattle, &c.

Females preponderated at the commencement and have continued to do so all through the famine. At the height of the famine, however, the number of children exceeded that of women.

Both because the employers have no money or grain to spend on wages, and because there is nothing to do in the fields.

Mr. Price.—The classes of the rural population first affected by famine are the ordinary cooly-labourers, especially those of the Pariah and Woddah (navvy) castes. These men are occasionally petty holders of land. The rain fails, they have had a bad crop the year before, they are "hand-to-mouth" people, and very soon get through what little grain they may have hoarded up in store, and dispose of such of their property as is saleable; they have nothing to do in their own fields, there is no ploughing or reaping work to speak of, and what there is, is done by the ryots and their own establishments. The next class to feel distress is that which supplies the ordinary wants of the cultivators, who very soon cut off any thing not absolutely necessary; the largest section of this, which is scattered over the country, is the weavers. Some of these combine agriculture with their usual avocation, and when not working in their fields weave cloths for hire, the employer finding materials. Distress very soon puts a stop to their professional employment, and they have to fall back upon labour. Others of the weavers, who are simply artisans, sell up all they possess. During the famine a very large proportion eventually found their way into poorhouses (relief camps) and on to village-relief.

The petty farmers come next, and then the servants of the better-to-do ryots, who are obliged, as a rule, to economise and, as a first step towards this, to send adrift the labourers for whom they have no longer occupation. The way in which the classes alluded to above are affected by any serious failure of crops is in a curtailment of their food to such an extent as to produce a visible falling off in condition, which is first to be observed amongst the young children. Not only is the effect manifested in this patent way, but if relief is not given, offences against property increase. The early applicants for relief neither consist, as a rule, of whole families, nor of isolated individuals. My earliest experiences of relief measures were in connection with works alone, and I cannot recall a single instance out of many thousands in which a whole family came on the works. Isolated individuals were certainly numerous, but, generally speaking, there were two or three of a family. Some one was left behind to look after the house, &c., and others had, for a time, employment elsewhere, and it was not until the pressure of the famine increased very considerably and the people had deserted their homes in search of work, that whole families applied for relief. Women and children all through preponderated in poorhouses and on works and village relief. The moment that rain came the bulk of the men who could work went away to the fields, leaving the women and children on relief works in such disproportionate numbers that it was often difficult to find suitable employment for them. Adults, both male and female, from about eighteen to thirty, as a rule, form but a small proportion of the applicants for gratuitous relief. During the late famine they were to be chiefly found on works. As regards field labourers deprived of employment who come upon relief, the first and largest batch comes on to the hands of the State, because there is nothing to do in the fields; the second and smaller section is almost entirely made up of the farm labourers usually employed all the year round by the ryots. These men are turned off by their masters because they can no longer afford to support them.

Mr. J. G. Horsfall.—Field labourers who work for daily hire are the first to suffer from failure of crops. Agricultural operations cease with failure, and their ordinary means of livelihood is thus wanting. Failure of rain in the first instance prevents ploughing and sowing. The land remains waste. The ryot, the usual employer, has no need of his field labourer, and if he has hitherto been paying him daily hire dispenses with his services without further ado. Such labourers usually live from hand to mouth, and are consequently compelled to wander elsewhere in search of labour. As distress increases, the ryot dispenses even with his permanent servant, the paleru, whom he finds himself unable to maintain. The desertion of home and village seldom takes place till all credit is exhausted and all saleable property disposed of. Meantime their scanty food is eked out with roots, leaves, and fruits that are never thought of in ordinary years. Resort is had to grain pilfering, cattle-mischief, robbery, and dacoity, and the Crime Register shows generally a large increase in crime. The first applicants for

relief are men wandering away in search of work and leaving their families at home. Finding that work is not procurable, he returns to take his family with him in search of relief whether by work or charity.

Field labourers consist of two classes—those who are hired by the day, and those who are hired by the year or more permanently still. The first class are turned adrift the moment the ryot no longer requires his services; the latter are retained until the ryot becomes apprehensive that his stock of grain will not suffice for the wants of his own family. This latter class is looked upon by the ryot almost as his own property, and is only discarded when the ryot is forced by his own necessity to do so, just as he parts with his cattle for a mere song, or even for nothing at all.

Mr. Soobien.—In the case of labourers, absence of field and other work and consequently the absence of earnings to buy food, with no property to sell, follow as a result of a serious failure of crops. The failure of crops raises the price of food grains and places the quantity requisite for his subsistence beyond the reach of the purchasing power of his wages which, owing to absence of work, a glut in the labour market, and want of employers, are materially diminished. Thus a failure of crops operates in two different ways on the labouring class. It diminishes their earnings and lessens their purchasing power. The effect is manifested in the reduction of the quantity of proper food, in the recourse to unwholesome food, and in the consequent gradual emaciation of the body. Want of work in the vicinity of their homes compels them to seek for labor elsewhere, and this leads to emigration. Movement of bodies of labourers from place to place is also an effect of the failure of crops. Further, when honest labour becomes scarce and is difficult to be had, other ways, no matter they are dishonest, for appeasing the cravings of hunger are thought of, and this leads to lawlessness and crime. As regards the begging class, who ordinarily lived on the bounty of their neighbours, they find it extremely difficult to live such a life in a year in which there has been a serious failure of crops, and their clamor for food therefore becomes very great.

When distress has began to be felt the members of a family begin to disperse in different directions, and it is only on rare occasions that the applicants for relief consist of whole families.

When things come to such a pass that through want of work in the neighbourhood the adult male members of the family quit their homes and emigrate to different places, then it is that the women and children left behind them preponderate among the applicants for relief.

Both causes, viz., want of work in the fields and want of means on the part of employers, contribute to deprive field labourers of employment, but the cause of the employers having no money or grain to spend on wages operates, I think, to a comparatively less extent. If the employers see that there is the slightest prospect of a favorable season, there is usually no lack of interest on their part in commencing agricultural operations. They raise money somehow or other and employ the labourers.

Seetharamiah.—Agricultural labourers and artizans are first affected, and next agriculturists of small holdings; the former by being deprived of field employment, which is the only means of their daily livelihood, and the latter by want of grain in store and by want of money to buy it from elsewhere. Both classes of people are therefore obliged to dispose of their household chattels and live stock, and then leave their homes in search of work elsewhere, or assume the profession of beggars or commit petty thefts. If they cannot by these means successfully earn their livelihood, their physique is deteriorated, and gradually sickness prevails, and mortality increases. In the beginning of distress applicants for relief consist only of isolated individuals, and gradually of whole families when they find that they cannot live otherwise. Among the applicants for relief women and children generally preponderate, their proportion of the population being naturally greater. This being the early stage of famine, it is more on account of want of labour in the fields than want of money in the hands of employers that the labourers are deprived of employment.

Major Baynes.—(*a.*) Those who live from hand to mouth, that is, those who are dependent on daily receipt of food or of wage for their daily expenditure, such as cowherds, hawkers of grass, of greens, of curds, and of fuel, &c.; the first four, through failure of their stock in trade, are compelled at once to adopt some other means of earning a livelihood; the latter can only earn a bare subsistence under normal conditions; but, as soon as the price of grain permanently rises, that of fuel falls because the rich men will not pay even the usual price of it, so that in large country towns it was sometimes unprocurable, and these classes were driven, at a comparatively early stage of distress, to maintain themselves on grass seeds or by acceptance of State relief on works, in poorhouses, or in their villages.

(*b.*) Rarely in family groups; the larger number consisted of elderly women, chiefly widows, unmarried girls, and children of both sexes, who in one of the ways described above had been contributing to the family purse, and also of infirm paupers who had previously been maintained by their relations or by public charity.

(*c.*) Applicants and recipients of relief were of all ages, but the women and children greatly exceeded the males in number. I am unable to have recourse to returns, so speak from memory, but I think that I am accurate in stating the ratio of women to men on gratuitous relief was two to one, and of applicants for employment on relief works as eight to one. The preponderance of female applicants for work was so great that it was impossible to employ them all except at a dead loss to the work, and more specially to the *male* workers, because, when payments are made on tasks, directly a *superfluous* agency is employed, the receipt of each person engaged to perform that task is diminished. I have seen one hundred women and children clamorous for employment, but not a single man amongst them, and women would often work as men with mometies and pick-axes on women's wage sooner than be turned away. The number of children on works averaged, I think, about 25 per cent. of the adults, but on gratuitous relief and in kitchens they were nearly equal in number to the total of both sexes of adults.

This state of affairs to European experience seems strange, but is, I think, to be accounted for in several ways—

(1.) That at all times women in this country perform more manual labour than the men as field labourers, weeding, planting, and picking crops, as carriers of burdens, as suppliers of grass, fuel, and water; whereas the men are too indolent and too conceited to work at any task which custom has specially allotted to the women, and, as these embrace nearly every ordinary avocation of life, the men have not much left to do.

(2.) Fifty per cent. at least of the women under forty had been abandoned by their husbands or the men with whom they had cohabited prior to the distress.

(3.) Every woman in this country is a mother who is capable of child-bearing.

(*d.*) As far as actual labourers are concerned, because there is nothing for them to do in the fields.

Mr. Longley.—Of the urban population, the cooly artizans and other cooly classes (*e.g.*, the blacksmith dispensing with his cooly-bellows-blower on account of high prices) are the first to feel the effects of famine by loss of employment consequent on diminution of proper food.

By final deprivation of cereal food and resort to

noxious herbs, &c., or alms to sustain life and a tendency to wander aimlessly away in search of livelihood, &c.

By local inquiries through Municipal and other local agency, thereby giving timely employment and thus preventing their tendency to wander.

MYSORE.

Mr. Ricketts.—The poorer or hand-to-mouth ryots and labourers and minor village servants, such as toties, taliaris, nirgantis, &c., who mainly depend upon their meeras or grain dues from ryots, and these dues in times of famine are naturally almost nil, and then come petty artizans and weavers, who in fact can earn nothing at such times; also gollurs and even wudders. It is not clear why gollurs should suffer so much unless it be on the supposition that their live stock is almost unsaleable in famine time. As a rule it may be said that those classes of the rural population suffer first and most who earn their livelihood apart from tillage and harvesting of crops.

The early applicants for relief consisted mostly of isolated individuals. Adults predominated over children. Females exceeded males in number mainly because there is nothing to do in the fields. Only the rich or exceptionally benevolent would or could go on feeding their field labourers when no equivalent was to be obtained in shape of their labour.

Question 3.—Classes of the Urban Population first affected.

What classes of the urban population are the first to feel the effects of famine, and in what way do those effects operate on them, and how do they manifest themselves? How may they best be watched and met in their first stage?

Punjab.—7 replies are given to the same effect. Distress in towns arises later than rural distress.

North-Western Provinces.—27 officers have answered. Chamars (leather workers) and weavers are first affected, because there is no demand for their wares. Relief works, municipal works, purchase of the cloth woven by Government are recommended.

Bengal.—14 officers have answered. Weavers and petty artizans; beggars. Many officers do not answer, others say they have had no experience of distress among urban populations.

Bombay.—10 officers have answered this question. The general opinion is—That the classes of urban population which first suffer are labourers for wages and petty artizans, especially weavers, the demand for whose wares ceases. Municipal committees may keep watch and assist these classes, perhaps by giving them employment in their own trades, or on municipal works.

Madras.—To this question 20 European and 2 Native gentlemen have replied.

The persons residing in towns amongst the classes who exercise trades and industries who first feel the effects of famine are artizans, weavers, potters, brick-makers, &c. Here, as in rural populations, the demand for their industry is diminished; the journeymen are dismissed, and later on the master workmen feel the pinch. In large towns Mahomedans and Brahmins, who in ordinary times subsist on the produce of lands leased out to cultivating ryots, or on the gifts of the pious and charitable of their respective persuasions, suffer severely, as do also professional beggars and religious mendicants.

PUNJAB.

Captain Wood.—The temporary scarcity in this district has not sensibly affected the urban population beyond the inconvenience attendant on high prices.

Colonel Parsons.—(*a.*) Of the urban population, weavers, sweepers, mochis, and other artizans. (*b.*) Earth works performable by persons of any occupation opened as near as practicable for their employment.

Mr. Coldstream.—The classes of the urban population which are the first to feel the effects of famine are the town mendicants. The usual doles of grain are restricted when scarcity begins, and the beggars feel the pinch immediately. They betake themselves to the poorhouse if they are allowed a dole there. The increase of applications at the poorhouse, if under reliable superintendence, is one of the earliest tests of scarcity in a town and its neighbourhood; and indeed I am inclined to think that the number and urgency of applications for relief at the poorhouse is, throughout a period of scarcity, one of the most reliable means of gauging the condition of the people. But, in order that this test may be properly applied, the superintendence of the poorhouse must be careful, intelligent, and independent.

The poorhouse at Hoshiárpur, which is under superintendence of the Rev. Mr. Chatterji of the American Presbyterian Mission, receives Rs. 100 per mensem from municipal funds, and, since the scarcity began last autumn, Rs. 50 per mensem extra have been granted from district funds.

It has been a most valuable agency, and itself constitutes an efficient test of the pressure of high prices.

In the milder forms and earlier stages of scarcity, I consider that increasing the grants to existing poorhouses and starting fresh ones is the best way to meet it.

Mr. Roberts.—Distress arising from drought does not so soon make itself felt in towns, where the trading classes are not so directly dependent on the produce of land, and have no fixed rent to pay, whether the crop is good or bad. The poorer classes of artizans are first affected. For instance, last year there was a dearth of cotton; the raw material rose in price enormously, and the cleaners, spinners, and weavers lost their employment and means of livelihood. In the same way an unaccountable stagnation in the shoe trade at Delhi affected the Mochis, Chamárs, and Khatiks throughout the district, and reduced great numbers of them to extreme destitution. These classes emigrate, and turn to other employments, or else subsist by begging. They have no one to represent their condition, and in large towns it is not easy to ascertain the extent of their distress. The Zaildár system does not apply here, and some special organization is necessary. Where municipal committees exist they might be utilized for the purpose.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Sells.—Of the town population, *chamárs* and weavers are the main sufferers, at all times a poor class.

Mr. A. Colvin.—Weavers, hangers-on, menial servants, poor relations, chamárs, small artizans, first feel the strain. By opening employment, municipal if possible.

Mr. Sandys.—The *juláhas*, *koris*, and *chamárs*, the infirm and habitual mendicants, are also the classes of the urban population that are the first to feel the effects of famine. The majority of them in ordinary years obtain a livelihood by manual labour and begging; some, however, eke out an existence by weaving and shoemaking. When prices are very high there is little demand either for manual labour, cloth, or shoes, and almsgiving is much restricted; and the classes named above suffer in consequence and are thrown out of employ or deprived of their ordinary means of subsistence, and consider themselves fit objects for gratuitous relief by the Government, and clamour for it, being most unwilling to make even the smallest return when it is given to them. As soon as it has been found necessary to start relief works in any district the magistrate of the district should be empowered to draft off to them all persons found begging in the streets of the towns and capable of performing work, whether they are willing to go or not. At first a very light task-work should be exacted from them, and as they became more accustomed to it the task should be gradually increased. If the number of aged and infirm found wandering about the towns is large, and prices are so high that there can be but little given in the way of charity, a poorhouse should be opened at the head-quarters station, and afterwards at each *tahsíl* as the distress becomes severe.

Mr. Tracy.—The effects of famine in towns are first felt by labourers and the poorer artizans, such as *júláhás* or weavers, *chípis* or calico printers, and *chamárs* or leather workers. They are thrown out of work and generally take to begging and theft, and often commit riotous attacks on the stores of grain dealers. Early commencement of relief works is the best way to check this state of things.

Mr. Mellor.—Of the urban population the *julahas* are among the first to feel the effects of famine. There was a great number, I know, in the Bareilly poorhouse last winter. These people were quite willing to work on being provided in the poorhouse with looms. Their own looms, they said, they had sold to buy food before they applied for relief, and there was no doubt of the truth of this, as I offered to buy or hire their looms for use in the poorhouse.

Mr. Kennedy.—The urban classes of weavers, pedlars, and others who depend upon the agricultural community are the first to show signs of distress, as their wares are the first superfluities with which the agricultural community can dispense. As the distress spreads upwards it affects all the retail dealers, except grain sellers. The city labourers are affected not by the agricultural distress as weavers and pedlars are, but by the contraction of expenditure which high prices and small incomes create among the middle urban classes.

On the other hand the demand for expenditure of food to the country may cause an increase of trade, or such an increase of wholesale trade may be due to extraneous causes independent of a famine, and this may bring about a prosperity which more than recompenses the loss due to the failure of the agricultural community. This was to some extent the case with the Sháhjahánpur city. The town population consists of a large landlord and money-lending class, and a very considerable trading class. The trade in grain and other produce swelled so much last year, partly on account of the famine and partly for other reasons, that it preserved the greater part of the city from any serious loss, and gave occupation to a large number of labourers. Even the weavers of the town suffered little, although their country brethren suffered severely.

The town weavers are chiefly engaged in the manufacture of fabrics for foreign markets, and therefore are not affected by the failure of agricultural society. The exports of native fabrics manufactured in the towns of Sháhjahánpur and Folkur only declined 25 per cent. while the village weavers were reduced to beggary. In the country towns of the district they manufactured only for local consumption, and therefore suffered as much as the weavers in the villages. The different fate of the Sháhjahánpur and the country town or village weavers illustrates the close connection between the pressure of famine and the economic relation between the town and the country. Another illustration of this may be found, in fact, that there was a general stoppage of trade in all articles of local consumption except grain. So far as this grain was imported from other districts it had to be paid for in cash or by exports. Accordingly when the rabi of 1878 was reaped an unusual quantity of oil seeds and wheat was exported.

Mr. Whalley.—The first class of the urban population which feels the effect of famine is the weaving class. The cloths they weave are purchased mostly by the cultivators in the neighbouring villages. A bad season leads the cultivators to economize first in the simplest and most practical fashion, in the purchase of clothes. The weavers' trade at once begins to stagnate. First their coarse cloths remain on hand and they cannot get rid of them. Very soon their necessities compel them to reduce the price of their goods, and this process goes on until the price of manufactured cloths sinks almost to the price of raw cotton, and there remains no possibility of earning a subsistence by the manufacture. The relative prices of cotton thread and manufactured cloth fairly measures the pressure of a bad season on the weaving class, and the only thing that can be done is to stimulate trade by Government purchases, which can be distributed for cloths to the paupers in the poorhouses, or made into tents for them, or reserved for after sale.

Mr. Lumsden.—The classes among the urban population who are the first to feel the effects of famine are the petty artizans and small traders, together with the class who earn a living as hired labourers. To these must be added the class who in England would be styled indigent gentlemen and women, natives of the upper classes who have seen better times, but who, some from circumstances beyond their control, others in consequence of their own conduct, are now in the best of times hard pressed to make ends meet, and to a great extent dependent on the assistance of relatives and friends, in the social scale to which they originally belonged, for the ordinary means of subsistence.

The regular pauper class of our towns and cities are of course also among the first to feel the effects of famine, for as sure as prices rise to what may be considered famine rates, the class on whose charity our town beggars are mainly dependent infallibly contract their purse strings, if they do not close them altogether. This is, I think, a peculiarity of ordinary native charity in this country; a threatened famine and the existence of widespread distress, which at home would give an *impetus* to private charity among all classes able to assist, have in this country quite the opposite effect.

It is not difficult to watch and be prepared with suitable measures of relief for distress among these

classes of the urban population. Distress among them will at once attract the attention of the local authorities, and may for a time be met by offering employment at subsistence rates on ordinary local district and municipal works; but these will not suffice if the pressure is long continued or there are symptoms indicative of approaching famine. With the presence of work for those able for it, it will very soon be found necessary for Government, if their lives are to be saved, to afford relief to the professional beggar class, the aged, the lame, the halt, the blind, and other mendicants incapacitated from bodily infirmities or age from doing anything to help themselves. The only class among the urban population among whom it is necessary to be specially on the watch for symptoms of distress is the indigent or broken down men and women who belong to the upper classes, who will often put up with extreme privation rather than make an open appeal to public charity of any sort. Distress among this class can be best watched and dealt with through the instrumentality of native gentlemen, official and non-official, who should be charged with the supervision of the muhallas of the town or city, with the circumstances and residents of which they are each best acquainted. As a rule, however, I believe that distress calling for Government assistance will not be felt quite so early among this class.

BENGAL.

Bengal.

Mr. Barlow.—Amongst the urban population, weavers, *koeries*, *gwalas*, artizans, and poorer families of the better class first feel the effects of famine. At the same time that prices are high the richer classes become economical, and country manufactures are at a discount.

Mr. Magrath.—The labouring class, I mean those who have no trade but who carry loads, or help in any work that is going on, are always the first to come on relief (amongst them the childless widows I have spoken of), and soon after them the tantees and artizans who work only for the poorer classes, then the kunpas and petty tradesmen who deal entirely with the poorer classes in a small retail way.

For the labourers there is nothing to do but to put them to work at repairing roads, clearing out drains, cutting grass for fodder, and the like.

The artizans may be employed at their usual trade, materials being advanced and the labour paid for; the manufacture being sent to some prosperous places for sale. Old women can always spin yarn, and, if any relief is being given, can be employed in husking and cooking rice.

Mr. Kirkwood.—Weavers and petty artizans are the first of the urban population to feel the effects of distress. Lord Napier (1866, Ganjam) well wrote of them:—"It is obvious that the same causes which "suspend the employment of labour in the country "must also affect the welfare of those who live by "small trades and manufactures. In this climate the "necessaries of life may almost be restricted to fire "and food, and the purchase of its simple comforts "and ornaments can easily be deferred or abandoned. "The dearth and dearness of provisions would alone "account for the depression of industry in the "towns."

BOMBAY.

Bombay.

Mr. Hewlett.—Among the urban population the small artizans and traders, such as weavers, potters, tailors, and such like, are, in my opinion, the first to feel the effects of famine. The demand for their particular manufacture or trade falls off and gradually dwindles until they are obliged to pawn or sell the very implements of their trade. Many cases of great distress among the Mahomedan weavers in towns and villages came to my knowledge during the famine. Even if the men leave in search of manual work, which they are not fitted to perform, the women remain behind, being generally *purdanishin* women, and suffer great hardship. I have known cases where the women and young girls who in ordinary times never leave the house have sought for employment at relief works to get food. In my opinion the only way to watch them is to employ Musalman inspectors to go round and visit house by house.

Mr. Spry.—Amongst the urban population the day labourers and the smaller artizans are the first to feel the effects of famine. Trade becomes slack, and the employers of labour reduce their operations. Hence those depending on their daily wages and those who have no resources first suffer. The labourers begin seeking relief work, and the artizans begin mortgaging their tools and implements.

The municipal committees, if they exist, are the best means whereby at the early stage of famine the urban population may be watched. Municipal works might also be opened for the labourers; and for the artizans, such as weavers, employments may be given them by the municipality by commission. At this stage, too, measures for yet further relief will be probably in contemplation, and the district authorities can usefully employ *lohars* in making hoes and picks, *sutars* in making their handles, and basketmakers in making baskets.

Mr. Propert.—The small manufacturers and labourers. In Khandesh the former are represented by poor Musalmans and *mhars*, who weave cheap and inferior cloth. The demand for their wares ceases, and as the above-named classes lead a precarious existence even in favourable years, any serious rise in the price of food quickly reduces them to the condition of paupers. In the first place they resort to begging, and subsequently they betake themselves to any small local works that may be available, but as a rule they prove to be very inferior as road labourers.

Where municipalities exist considerable relief may be afforded in the early stages of distress to the very poorest classes by the purchase of grain on the part of the municipal committee in the cheapest markets, and the retail sale of the same at cost price. Loans of grain or money without interest on the part of the richer merchants to the charitable committees are also very useful. It will generally, however, be necessary to start some small works from municipal or local funds at an early stage of scarcity, upon which the pay is merely sufficient to enable a person to exist. By this means district officers are enabled to judge whether the scarcity is sufficiently severe to induce people to leave their homes in order by work to escape starvation. After this fact has been ascertained, steps should be taken for the establishment of relief works on a proper footing, under officers of the Public Works Department.

Mr. Norman.—The urban population in this district was not seriously affected during the last famine. The poorer classes of artizans, such as weavers, leather workers, &c., are those who first suffer, owing to a less demand for their wares, and to the general rise in prices. As far as my experience goes, they require no watching in the first stage. As soon as

8901

Ch. II Qn. 3. Bombay.

they are destitute they will present themselves for relief.

Mr. Hamilton.—In the town of Sangamner (population 9,000), the weavers were the people who seemed to be the first and most severely affected. All demand for country cloth ceased, and the weavers were forced ultimately to come on to relief works, our attempts to give them employment in their own line having failed.

Mr. Bosanquet.—The weavers, who lost their employment in the famine because the people more immediately affected by it had not money to buy clothes. These persons, when much pressed, would seek to obtain employment on relief works if possible, but as they are by their previous habits unfitted for such works, it is preferable to give them the means of carrying on their own employment.

Madras.

MADRAS.

Mr. Whiteside.—In the towns, the petty artisans, and more especially weavers, brass-workers, goldsmiths, washermen, and barbers are the first to suffer. Such people depend for their support in ordinary times upon the expenditure of the more wealthy in little luxuries which are the first things that are dropped when a famine makes its appearance.

Mr. Webster.—Artisans, weavers, daily labourers, and habitual beggars. Distress among such people is manifested by an increase of alms-begging and by their wandering about the streets.

Mr. Grose.—To the labourers and beggars, as the part of the population first affected by famine, must be added for towns where they are sometimes very numerous, the recipients of small ready-money pensions. The distress shows itself by outcries and disorders in the bazaar and not by wandering in this case. Relief works on subsistence wages should be provided near the town at an early stage.

Mr. Sewell.—In towns the habitual beggars feel the effects of famine first and manifest it by their increase of numbers, poorer appearance, and greater importunity. They are a most difficult class to deal with, being vagabonds and objecting most strongly to anything like the restraint and cleanliness of a camp. Without force it is next to impossible to keep them within bounds. What they like is to get a daily dole or meal and then to wander about in hopes of picking up more. If it were possible at the commencement of a famine to seize and confine in a camp all the professional beggars, it would be comparatively easy to assist the more deserving class of petty shopkeepers, hucksters, &c., who are the next to suffer. If legislation is to be adopted to give officers greater power of control, I think the professional beggar class is the one to which it should be first applied.

Mr. Price.—As soon as famine, as such, assumes a definite form, there is, in my experience, a tendency, and a very natural one, amongst the poor classes to get rid of the task of supporting useless relatives. The consequence was that the moment that the State or charitable private individuals step in, every infirm, old, crippled, or otherwise incapacitated person was turned off by his former supporters.

Mysore.

MYSORE.

Mr. Ricketts.—The same effects are observable in the urban population as in the rural, but naturally more intensified, as many ramifications of skill and industry which give employment to numerous individuals and classes are seriously interfered with in famine time. Those thus reduced to want may best be dealt with in the first stage by relief works near their respective towns, whilst a chosen few should be helped by advances in still pursuing their former avocations.

Ch. II Qn. 4.

QUESTION 4.—PROPORTION OF POPULATION SUPPORTED BY PRIVATE CHARITY.

There is a considerable number of poor and infirm persons, who in ordinary years are supported by their richer relations and friends or caste fellows, and of habitual mendicants, but who become claimants of State relief when scarcity or famine arises. What is, approximately, the proportion of this class to the total population, and at what stage do the springs of private charity begin to dry up?

Punjab.—7 replies. Estimates vary. One gives 5 per cent. Springs of charity continue open as long as there are means to supply them.

North-Western Provinces.—An approximate estimate of 5 per cent. is offered. Charity dries up as prices rise, but the mendicants are cast off before the poor and infirm relatives.

Bengal.—Some estimates are offered, but differ so much that they are of no practical value. Springs of charity do not dry up if people continue able to give.

Bombay.—8 officers have answered the question. The highest estimate of the class is given at 5 per cent. of the population. Charity dries up as prices continue to rise and reach famine rates.

Madras.—16 European and 3 Native gentlemen have replied to this question.

The proportion of persons referred to in the question who are likely to claim State relief in time of famine is variously estimated at from less than 1 to 10 per cent. of the population. The unproductive classes, according to the last census returns, are 1·17 of the adult male population, but to this must be added, for the purpose in hand, a small proportion of those who, although mainly dependent on others in ordinary times, contribute in some degree towards their own maintenance, and infirm persons and helpless children. The approximate proportion is probably about 4 per cent. of the entire population.

PUNJAB.

Mr. Coldstream.—My opinion is that the proportion to the total population of poor and infirm persons who in ordinary years are supported by their friends, and of habitual mendicants, is not less than 5 per cent. All very old persons, all the blind and sickly, and nearly all the lame and leprous, come under this class.

The springs of private charity necessarily dry up quickly, because they are not deep; purses are not long, and when a real pinch comes, most of these persons are assuredly in a more or less precarious and dangerous position.

Mr. Roberts.—As far as dependent relatives and caste fellows are concerned, charity is co-extensive with the means of the givers; and as long as people have anything to subsist on, they generally, to their honour be it said, share it with their belongings; but habitual mendicants, that is blind, lame, and helpless people, but excluding religious beggars, feel the pressure of scarcity almost from the very beginning and become claimants for State relief. Many wealthy *banidhs* and shopkeepers, it is true, continue to make daily distributions of grain, but the charity of these is quite insufficient to cope with the daily increase of pauperism. In the town of Rewári I estimate this class at about 3 or 4 per cent. of the population. In other places where relief has been organized I am unable to form any estimate owing to the large numbers of applicants who have come from native states and surrounding villages.

Mr. Nicholl.—In Amritsar the proportion of habitual mendicants, poor and infirm people, to the total population of the city is about 14 per cent.

The springs of private charity begin to dry up at the commencement of the second stage.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Plowden, Meerut.—The number of habitual mendicants is known with some approach to accuracy in each large town; and in 17 towns in this division, in each of which the population exceeds 10,000, the per-centage of beggars, *i.e.*, begging families, including men, women, and children, on the total population, was at the last census 58 per 1,000.

The whole of these persons would certainly come on the public funds.

Mr. A. Colvin.—Proportions quite unknown. Springs of charity begin drying up at a very early stage, as the need of self-preservation has become apparent.

Mr. Sandys.—The proportion is approximately 5 per cent. of the population. The springs of private charity may be said to begin to dry up when prices are higher than 12 seers of the ordinary food grains for the rupee.

Mr. Whalley, Mainpuri.—I do not think there is any stage at which the springs of private charity dry up. The stream is contracted, of course, and unequal to the demands on it, but I have never known it run dry. There is a stage at which baniyas cease to distribute food gratis, and that is when they are frightened at the crowds which collect and think their shops in danger of being looted.

Mr. Kennedy.—Private charity begins to dry up in proportion as the continuance of high prices affects domestic economy. It has been gradually decreasing throughout the last year, but from August to October 1877 it was active, and only ceased with the opening of the district poorhouse to which the natives subscribed largely.

Mr. Leeds.—No reliable statistics are available. I should estimate approximately the proportion of this class to the total population at 5 per cent.

Captain Pitcher.—The proportion of poor, infirm, and mendicants living in ordinary times on private charity must be very large. In a city like Lucknow, for instance, where the beggars are estimated at 7,000 alone, I dare say that 25,000 would fairly represent the number who cannot ordinarily provide food for themselves by work of any sort.

Mr. Stoker.—Those supported by distant relations or strangers are early turned adrift, are, in fact, among the first to go. I have no grounds for calculating the number of these classes. It is a mere conjecture when I say that I do not think they exceed 2 or 2½ per cent. of total population.

Mr. Lumsden.—I do not feel in a position to venture an opinion as to the proportion the habitual mendicant and indigent classes bear to the total population. An approximately correct opinion on such a point could only be based on a census which distinguished these classes; and even were such a census taken, the data obtained would not be altogether reliable and trustworthy. I do not, however, think that the proportion of this class to the total population can exceed seven per mille.

Mr. Lawrence.—Amongst the rural population about 20 per cent. are supported by their friends. Nearly the whole of them, together with many of their supporters, come on the State for relief when famine arises. In towns the number of people supported by their friends is very much larger (I believe 50 per cent.), but only 10 per cent. of these latter will become applicants for State relief. In a famine year the whole of the habitual mendicants come on the State.

Regarding the stage at which the springs of private charity begin to dry up, the old saying is "*solah ser tak dharm bana rahta,*" *i.e.*, as long as grain is not dearer than 16 seers to the rupee, piety (or natural affection towards one's relatives) holds out. But this refers to a time when 16 seers was considered very dear. In the present day, when grain falls below 12 seers, private charity begins to dry up.

But if Government pursues the same system of poor relief that it has adopted hitherto, it will be found, with every occurrence of scarcity, that private charity will dry up at earlier and still earlier stages.

Colonel Chamier.—Habitual mendicants are cast adrift very early in the days of famine, but poor and infirm relations are supported until State relief comes to the rescue, or until private funds are exhausted. Natives of India even, in a moderately thriving condition, are kind and generous to their poor relations. Their charity is bestowed with great discrimination; at the first glance it may seem to descend to stinginess, but the givers have gauged by experience what relief is sufficient.

Ch. II. Qn. 4.

BENGAL.

Bengal.

Mr. Worsley.—It is impossible to say what may be the proportion of the class here mentioned to the total population. Roughly I should be inclined to estimate it at about 1 per cent. of the population, or in round numbers 20,000.

The springs of private charity in 1874 began to dry up when the Government introduced its liberal and comprehensive system of relief.

Mr. Magrath.—The proportion according to the census taken is 1 in 200 for all Bengal; but in Tirhoot the proportions were not 1 in 600. In Monghyr the proportion is said to be 1 in 500. They do not come on relief till the majority of the local population are compelled to restrict the food they cook to the smallest quantity they can live on. Up to that time the beggars getting the surplus have not to go about for relief; they get it from their regular clients.

Mr. Marindin.—About ·27 per cent. I found the estimate upon some inquiries lately made at Buxar. I think that, if left to themselves, people able to afford it will always give, and the springs of private charity never absolutely "dry up." What happens is that the numbers to be supported become so large as to overwhelm the efforts of the charitable public, and many must consequently go unrelieved. Then if Government steps in, the public stop giving, and send those whom they have hitherto managed to support to the Government poorhouses.

Mr. Metcalfe.—I should say that about 3 per cent. of the population, who in ordinary times are supported by the charity of their neighbours, become claimants of State relief when scarcity or famine arises.

Baboo Ramani Mohan Chaudhuri.—The proportion of the beggars to the total population here is approximately 4 or 5 to 100.

Bombay.

BOMBAY.

Mr. Hewlett.—In the Deccan, at the time of the Census in 1872, the total population being 7,966 061, the number of persons having no ostensible independent income, beggars, paupers, &c., was 128,945, or 1·6 per cent. of population.

Mr. Spry.—It is difficult to make any accurate calculation of the numbers of decrepits and poor supported ordinarily by relations and friends, and of habitual mendicants. I think 5 per cent. may be their approximate proportion to the whole population. The springs of private charity begin to dry up when there are no immediate prospects of amelioration in the situation.

Mr. Propert.—It has been calculated that about 5 per cent. of the total population live on the charity of their friends and relations, but I cannot say on what the calculation is based. In times of scarcity, mendicants, professional and casual, increase at an alarming rate, and in the case of large towns the regular beggars are quickly supplemented by arrivals from without. We cannot say that the springs of private charity ever entirely dry up; charity really continues throughout a season of famine, but the normal handful of grain given to each applicant in favourable seasons shrinks visibly in size in hard times.

Mr. Moore.—The poor and infirm persons and mendicants, who become claimants of State relief when scarcity or famine arises, are between 1 and 2 per cent. of the total population. The springs of private charity begin to dry up as soon as the food grains reach famine prices.

Mr. Robertson.—I cannot say approximately what the proportion of poor and infirm may be to the population. It is not very large, but I am glad to say that private charity is ever watchful and kind, and that it was only when the famine became protracted, and the pressure very severe, that private charity became exhausted.

Colonel Anderson.—Infirm persons, mendicants, and such like, will be deprived of private charity as soon as it is seen that public charity is ready to support them, nothwithstanding that their relations and caste fellows might be able to support them for some time to come.

Madras.

MADRAS.

Mr. Whiteside.—I am of opinion that about 1 per cent. of the population of a large town are habitual mendicants, and about 4 per cent. poor and infirm. Charity is regarded by the native community as the greatest of virtues, and its practice is maintained even to a scanty extent to a very advanced stage of a period of scarcity. Not until it is thoroughly borne in upon men's minds that the famine is really serious, and the importance of self-preservation is forced upon them by stress of circumstances, do the springs of private charity completely dry up. When lately the season began to mend, and fresh grain began to come into the markets, I noticed with surprise and pleasure as soon as prices fell how the practise of charity began to revive, and I saw beggars receiving small handfuls of grain here and there.

Mr. Horsfall.—The general opinion is that about 3 per cent. of the population are more or less dependent upon the support of their richer relatives or private charity. Private charity is very extensive; it is practised daily and without ostentation. It is difficult to prescribe an exact limit for the cessation of private charity: it is inculcated as a Divine obligation. Charity to poor and infirm relations does not cease until the means of self-support cease to the person hitherto protecting. The habitual mendicant does not hesitate to seek relief both by private and State charity. At no time can the springs of private charity be said to dry up except with the inability to bestow charity.

Mr. Martin.—Approximately, as far as I can ascertain, habitual mendicants are about 2·5 per thousand; deformed, blind, and other persons physically incapable of work are 3·5 per thousand; and old, infirm dependents of families 50 per thousand; total, 56 per thousand, or 5·6 per cent. Private charity begins to fail to a certain extent the moment people become aware that the failure in the harvest is universal.

Mr. Knox.—I should say that the number of those who from age or infirmity are unable to shift for themselves would be about 10 per cent. I do not include professional beggars, but I should not think that the number of these is large, and they need not be taken into account; they are mostly able to work and, like others, would be forced to apply for relief when distress became severe.

All the large numbers of infirm persons would not however be on our hands at the commencement of distress, but only the infirm of the labouring classes and poorer cultivators. This number, though amounting to 10 or 12 per cent. of the total numbers in these classes, would not be more than about 1 per cent. of the entire population. It would not be until famine

became so severe as to affect all classes composed of persons of only moderate means that the per-centage would much increase. It would require half the population to be on our works to make it rise to 5 per cent.

Seetharamiah.—The proportion of the class of people mentioned in this question to the total population may be approximately estimated at 6 per cent. This proportion is larger in the urban population, where the tendency and necessity to depend upon others, is greater than in village agricultural societies, who are all self-protective, except those completely unfit for work by physical unfitness. Private charity begins to dry up when the prevailing high prices begin to press the givers hard. The agricultural classes, many of whom after a fair crop followed by a total failure would have left for them surplus grain for about three months, will continue their usual charity till the greater portion of their own stock is exhausted. During the earlier stages of distress the usual charity is not discontinued all at once. The discontinuance is only gradual, and would not be felt to any perceptible extent till numbers seeking gratuitous aid become overwhelming, when alone arises the inclination to stop the usual charity altogether.

MYSORE.

Mr. Ricketts.—The proportion here referred to of poor and infirm persons dependent upon relations and friends, &c., and habitual mendicants, to the total population of this district may be roughly or generally given at 12 per cent., and at least half of them become claimants of State relief when famine arises. It is difficult to say at what stage the springs of private charity begin to dry up. Certain it is that such springs dry up gradually and under the pressure of a growing necessity.

Question 5.—Forecast of Condition and Requirements of District.

It is obvious that if an accurate forecast of the condition of the people during the approaching season, following any more or less serious failure of the ordinary harvest could be made by the district officer, it would be of great utility; in what way could he make it, and on what data should his calculations be based? Suppose for instance that he estimates that half the average food crop has been lost; for the support of how many people does the balance that is saved suffice? How are the rest of the people to be fed? He must form an estimate of the food stocks in the country and of the power of trade to bring in more. Supposing these two elements sufficient to supply what is wanted, there would be no famine of food. But there may be lack of money to purchase food; how is an estimate to be framed of the number of persons who would probably be able to purchase, and of the number who must be assisted by the State, either by employment which will bring them wages or by food if they cannot work? These would consist mainly of the classes indicated in questions 2, 3, 4, viz., the field labourers, the urban poor, and infirm dependents or mendicants. What numbers approximately of these classes would you expect to have on your hands if the food crops in your district failed to the extent of $\frac{1}{3}$, $\frac{1}{2}$, or $\frac{3}{4}$? and if this happened in two consecutive years.

Punjab.—3 answers are given. Some estimates are offered, but the replies rather illustrate the difficulty of making them than afford much light.

North-Western Provinces.—26 answers have been given. The possibility of making an accurate estimate of food stocks is doubted. Some conjectures as to the number of persons requiring relief are offered.

Bengal.—15 officers have answered. The majority think that the data for a useful forecast are wanting, and that this is especially the case in Bengal, on account of the absence of agricultural statistics, Estimates are given in particular cases by some officers, and also of the numbers who might come on relief.

Bombay.—10 answers have been given. The possibility of making a forecast of any practical value is doubted. So also an estimate of the numbers who may come on relief.

Madras.—14 European and 3 Native gentlemen have replied to this question.

This statement shows that where the land is held direct from Government there are available data for making a more or less accurate forecast of the condition of the people in a season following a failure of the ordinary harvest; but in zemindaries, owing to the cultivation returns not coming into the hands of the Government officers, such data are not available. Another disturbing element in making such a forecast is the improbability of estimating the extent of private stocks, regarding which the holders, whether dealers or agriculturists, maintain a jealous silence. As regards the proportion of the population likely to require assistance from the State if the food crops failed to the extent of $\frac{1}{3}$, $\frac{1}{2}$, and $\frac{3}{4}$, the evidence goes to show that one year's partial failure does not tell seriously upon the people, though a $\frac{3}{4}$ failure over a large area might bring about 7 per cent. of the population of the affected tract on to relief. If, however, the failure extends to the second year the estimate stands as follows:—

Second year.	Numbers requiring relief.
$\frac{1}{3}$ failure	7 per cent. of the population.
$\frac{1}{2}$ "	10 " " "
$\frac{3}{4}$ "	22 " " "

PUNJAB.

Muhammad Hayat Khan.—No doubt it would be meeting the danger half-way if an accurate forecast of the condition of the people during the approaching season following any more or less serious failure of the ordinary harvest is made by the district officer. To do this it would be necessary first to ascertain the amount of loss of the last food crop, and the distress prevailing in the country, the estimated produce of the present harvest, and the existing food stocks in the country, and the power of trade to bring in more, and then calculate how far the resources will suffice to meet the requirements of the district. In years of distress the assistant and extra-assistant commissioners should take a round in their sub-divisions, and personally ascertain the food stocks in the country, and the amount of produce of the present harvest. It is not possible to form an accurate estimate of the amount of grain that would likely be imported into

CH. II. QN. 5.

PUNJAB

the district. It all depends on the urgency and the amount of requirement of the district. The merchants as a rule take their grain to the market where it would likely obtain a ready sale, and fetch the largest amount of profit. Thus if grain be selling in the Gurdáspúr District at a very high price, the tide of commerce will turn to this district; but if, on the other hand, the demand for grain be urgent in other districts, it will take its course to those places, and instead of receiving any supply we shall lose what we already possess. A correct estimate of the out-turn of the kharíf can easily be made in September, and that of *rabi* in March, nor would it be difficult to assess the grain stocks in the district. A correct account is kept by every *mahájan* of the grain stored by him, and on asking for the information it will be immediately obtained. But it will not be easy to form a conjecture what number of persons in the district, in the event of an outbreak of famine, would be able to purchase grain and what number not. It all depends upon the nature of the distress. If one-fourth of an average food crop is lost, no one, it is believed, would ask for help; the same may be said if even half is lost; but if $\frac{3}{4}$ is lost and for two successive years, then 1–10th of the population would be in need of health; but of this 9–10ths would earn their livelihood by working as labourers, and only 1–10th, that is one-hundredth part of the whole population would require gratuitous relief. If, however, the crop fails continuously for more than two years, the distress would indeed be very severe, and, excepting only the well-to-do class, the whole population will have to be fed.

Mr. Coldstream.—If in the same year both harvests failed to the extent of $\frac{1}{3}$, I should expect to have on my hands about one per cent. of the population, or about 10,000 souls.

If in the same year both harvests failed to the extent of $\frac{1}{2}$, I should expect to have on my hands 5 per cent. of the population, or nearly 50,000 souls.

If in the same year both harvests failed to the extent of $\frac{3}{4}$, I should expect to have on my hands nearly $\frac{1}{10}$ of the population, or about 90,000 souls.

This is a purely agricultural district, but it is very thickly populated.

A special inquiry into the food supply was made this year, and submitted to Commissioner with this Office, No. 290, dated 30th May last.

The result was that about $\frac{1}{9}$ of the produce of the district is to spare for export or storage in a year of average crops, which proportion, however, is somewhat increased by imports of cheap grain from Trans-Sutlej. One-ninth produce is calculated to represent about 26,000 tons of grain. Perhaps on an average year about half of this is exported and half stored permanently in the district.

It was also discovered that the stores in the district were all but exhausted when the present spring harvest was gathered.

Mr. Benton.—The stocks in hand might theoretically be determined by actual inspection, or by collecting information regarding them; but in this country I despair of obtaining much satisfaction in this way. I suppose, therefore, that dependence must be chiefly placed on an exact knowledge of previous harvest, and on information as to the course of trades, together with a knowledge of the consumption of the people. This brings us back to preparation of correct returns of the out-turn of crops, which I have already discussed. If this were satisfactorily provided for it would dispose also of factor No. 2.

As regards the consumption of food this might be determined by actual inquiry in the locality, and the result should be verified by the import and export returns of municipalities. The decrease of consumption consequent on the rise of price would have to be duly taken into account. The 4th factor would be the most difficult to deal with satisfactorily of any, and I do not think that the district officer has at present the means at his disposal.

I would propose to deal with it in this way. Before a crop has reached maturity, when the out-turn can be accurately estimated, barring calamities, each district officer should submit a return of the out-turn of crops prepared with all possible accuracy, along with a statement of the existing stocks, and of the amount required for the consumption of the population until the next corresponding harvest, so as to show what surplus would be available for export, or what deficit required to be supplied. If the result were materially altered by calamities in harvesting a supplementary statement could be submitted showing the effect. These statements should be checked and compared by a central authority, and should then be published without any delay, together with a note by an expert, which would compare them all together and endeavour to determine what would be the prevailing prices at different dates throughout the year at all the ruling marts throughout the province.

Experience I consider to be the only safe guide in a matter like this, and judging by the light of it I should say that if the crops failed to the extent of half in two consecutive years the country would be impoverished, there would be great difficulty in realizing the revenue, but that distress would not be very apparent. My reason for saying this is that during the past year we had a failure of $2\frac{1}{3}$ crops out of 4, and the largest number relieved on relief works was 2,419 in November last. If the *rabi* before the last had not been a partial failure I think no relief would have been called for. If, however, the crops failed to the extent of $\frac{3}{4}$ in two consecutive years we should have as nearly as possible towards the end of the period the state of affairs in the famine of 1869, when first two crops completely failed, then the third was scanty, and the fourth entirely failed. The maximum number receiving relief in any month was 12,120 relieved gratuitously, and 1,814 on relief works, out of a population for the distressed tract of 2,96,070, giving a per-centage of 4·7 instead of 12·5 as given by the Honorary Assistant. The distress ought to be somewhat less than this, as the only crop out of 4 was scanty or below average.

NORTH-WESTERN PROVINCES AND OUDH.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Plowden.—First of all, no accurate forecast can be made by a district officer of the condition of the people of his district during the season which will follow any more or less serious failure of the ordinary harvest; and for this reason he can only judge of the condition of his own district, and has but partial knowledge of the condition of other districts, it may be near or it may be far away from his own locality; yet the circumstances of these neighbouring or distant districts may exercise a great and unforeseen influence on the food supplies of his own district.

Take the case put in the question. We will suppose a district like Cawnpore, in which half of the average food crop has been lost, and we will suppose the collector is able to say with confidence, and with good reason for his confidence, that the balance saved will support his entire population for three months. Well he has to consider the food stocks in the country apart from his district, and the power of trade to bring in additional food stocks. Admitting for the sake of argument that he is able to tell or to estimate with an approach to accuracy what is the number of persons in his district who will have means to purchase during the next six or twelve months as the case may be, and

of the number who must be assisted by the State, how could he say what would be the effect of scarcity in Poona and Sholapur in sending up prices or diminishing his existing stocks, or in decreasing the number of markets open to him for the supply of food stocks required by his district, and thus completely altering the conditions on which he makes his estimate of the extent to which he can procure food stocks from outside his own district, or the extent to which his own stocks will be depleted. Yet the demand at Poona and Sholapur last year did exercise a decided influence on markets so distant from these places as the markets in the Allahabad Division.

It seems to me that the most far seeing of district officers, the collector most acquainted with the circumstances of his people, can do no more than this. He can get some idea of the number of persons who earn a precarious subsistence, and have only a day-to-day means of life, and of those who are beggars. He can also form a fair estimate of the yield of the past harvest though this is more difficult. He may perhaps, but I think that is very doubtful, go even further than this and form a fairly trustworthy estimate of the food stocks available in his district. There are so many contingencies, so many accidents, that may exert a sensible influence on the supply in his own markets, on the stocks in markets to which he might resort in case of want, and on the purchasing power of the rupee, that I do not see how, with his means of information, he can go further than this.

Anyone who has studied with care the history of prices and the evidence taken by the committees, Lords and Commons, so far back as 1833 on agricultural distress, will understand what great difficulties have to be overcome in making any accurate forecast of this nature, even in a country with extended facilities for acquiring information and for publicity like England. How much greater must be those difficulties in a country like this, where neither the sources of information are so readily accessible nor is publicity so prevalent. Who is there, in fact, who can honestly say he can really form a trustworthy estimate of food stocks in this country for any single district? I am certain that in every instance in late years where the attempt has been made to obtain an accurate estimate of food stocks either in a particular district or in a particular province it has been attended with conspicuous failure.

Look at the conflicting opinion as to the weight of an average harvest per acre in different parts of the country, or in the same district, where the estimate is made by several persons, and we can then form an opinion as to the difficulty of getting a really accurate estimate of the food stocks of the country or of any part of it.

Mr. Colvin.—Every man will do this his own way. It is useless to attempt any general answer to such a question. The data for much of such an estimate are obvious; for much again there are absolutely no reliable data, *e.g.*, the class who will claim relief, for this depends on the extent and endurance of the famine. The reply to the last paragraph cannot be given unless I am told how the food crop stood in adjoining districts or in remoter sources of supply.

Mr. Sandys.—I have no data on which to base any calculation as to the number of persons who must be assisted by the State, if a certain proportion of the crops failed and there was no food famine. Such conditions have not occurred in this district. Heretofore, when there has been such a failure in this district it has extended over so large an area of these provinces that a famine of food has followed as a necessary consequence. Up to the present time such records as exist of previous famines show that in this district complete failure of the crops has not extended to more than one out of the two harvests in the year, and that scarcity has arisen in consequence of the partial failure of the crops in two consecutive harvests.

In 1860–61 the out-turn of the autumn harvest was under half of an average year, and spring crops failed altogether. The number of persons said to have been relieved was 479,926.

In 1868–69 about a half harvest was gathered both in the autumn and in the spring, and the total number of persons relieved was 707,287.

In 1877–78 there was a complete failure of the autumn harvest and a good spring harvest. The average daily number of persons on the relief works from the time they were first started in August 1877, until they were closed in March 1878, was 2,220 (these may be classed as field labourers), and in June and July 1878 4,274; and the average daily number in the poor-house between 17th September and 16th October 1877, and 17th December 1877 to 7th April 1878, was 647 (these may be classed as the urban poor, infirm dependants, and mendicants); and in the relief camps in June and July 1878 the number was 2,017, and the daily death rate from 1st October to 30th June was 116 in excess of the rate for the same period of the previous year. These may also be put in the same class as the poorhouse population. Adding together the totals of the daily numbers on the relief works and in the poorhouse and of the excess death rate gives a gross total of 9,274, and this is approximately the number the Government would, in my opinion, have to provide for during eight months, in case of the complete failure of one crop or of one half the crops in two seasons following a harvest much below the average. If the previous harvest had been a fairly good one, no distress would I think be felt if the yield of the next kharif crop were only half as much as in an ordinary year; but if this shortness were to be succeeded by only half the usual out-turn of the rabi, then I estimate that the State would have to support 4,637 persons for three months or longer, if the prospects of the ensuing harvest were not favourable. A failure of only one-third of the crop in both harvests would not, I think, require any special measures of relief to be taken if the out-turn of the former year had been an average one. I have taken into consideration the excess mortality in the months of April, May, June, and July 1878, as well as the numbers on the relief works and camps reopened in the months of June and July, as they may be ascribed to the failure of the kharif crop.

Mr. Tracy.—The answer to the question for how many people would half the average food crop suffice must vary with the circumstances of each district. In a grain exporting district half the average crop might be enough, or more than enough, for the whole population. I am not aware of any method by which it is possible to form an estimate, as distinguished from a mere guess, of the number of persons who must be supported by the State in the event of famine. All that can safely be said on this subject appears to me to be that the collector of a district containing a large population of non-agricultural castes, such as *chamárs*, *júláhás*, and the like, who, even in seasons of plenty, breed up to the verge of the starvation, must expect that large numbers of them will come on his hands in times of distress. In districts bordering on native states he must also be prepared to provide for crowds of immigrants.

Mr. Kennedy.—This district can never suffer from an absolute lack of food, as it is penetrated by the railway, and carries on a considerable commerce with all the chief centres of trade, but in estimating the local food resources of the country two facts would have to be taken into consideration, namely, the amount of land under food crops, and secondly, the amount of grain in store. It is easy to make a rough estimate of the first. All the land under cultivation in a year of famine may be assumed to be under food grain, at least that was the actual case in this district in 1877. The amount of land under cultivation can be approximately ascertained, through the ordinary revenue agency, at the very beginning of the famine, and, as it will all be irrigated, we can assume the

average district out-turn and obtain a sufficiently close approximation. The second element, however, namely, the amount of grain in store, could only be estimated after a long course of traffic registration.

It is possible, however, to form on general grounds a sufficiently close guess. I shall give as an illustration the calculations made for the district last year.

It was assumed that the agricultural community always retained sufficient food to support itself from one harvest to another, or say for six months. Three of these months had gone when the failure of the monsoon become decided. It was assumed therefore that there must be at least three months grain in the country.

From the registers of town exports and from the railway returns it was evident that a very much larger amount of grain than usual had been exported. This export trade was much larger than any that had previously occurred, and it was known that the town stocks were reduced as low as possible. It was therefore inferred that there could not be any large balance of grain in store throughout the country beyond the three months supply which I have already mentioned. This estimate was confirmed by consultation with landholders, grain dealers, revenue officials, and others. I now come to the verification.

I estimated in para. 3, chapter I., the maximum consumption of the district at something less than 5,500,000 maunds of grain. In a year of scarcity this will be diminished, let us say, to 5,000,000 maunds. Of this the town population will consume 800,000 maunds per head. The town population was supported entirely by imported grain, and may be left out of the calcul tion; the country population will thus consume in a year of scarcity 4,200,000 maunds per annum, and we have to calculate what stores they possessed in August 1877 for eight months till the arrival of the rabi. The consumption of these eight months will be 280,000 maunds; 82,000 acres of food grain multiplied by 11½ maunds per acre give 946,000 maunds. 175,000 maunds were exported to the district from the towns. Add supposed food stock for three months 1,050,000 maunds, and we have a total of 2,171,000 maunds, or 600,000 maunds less than the country must really have possessed, *i.e.*, the country had really four and a half months supply instead of three months supply as was supposed. At the end of March the district was largely importing food from the towns, and the grain stocks were almost wholly exhausted. We may therefore safely say that at the commencement of the monsoon this district has never had less than five months stock in hand, even in times of excessive exports. It would of course be possible to keep up a yearly calculation of these grain stocks, commencing with the figures which we have thus ascertained. But it will probably be of little value. We know, as I have showed, the minimum in one exceptional year. There is no means of ascertaining the maximum, but as the amount produced by the district exceeds its maximum consumption only by two or three lakhs of maunds, and when grain is not exported, the total maximum of food stock is probably never equivalent to more than ten months' consumption, the initial grain stock may always be assumed to be between these two estimates.

I now proceed to the second part of the question, and first I shall calculate the numbers of the classes enumerated in paras. 2, 3, and 14.

1st.—The total number of male labourers above 15 is 25,954, multiplying by 4 we have 100,000 in round figures, or the total of the labouring class inclusive of their families.

2nd.—The petty mechanics and traders entirely dependent upon the agricultural community may be estimated at 60,000. All of them are a little above the level of day labourers.

3rd.—Mendicants 10,000.

We have now to add the number of cultivators unable to bear the distress. Judging by the statistics of a large estate in the worst part of the district, I estimate that six-tenths of the cultivators could weather the year without being reduced to poverty; three-tenths more require assistance to continue their cultivation, one-tenth has died or fled. This last tenth therefore must be included in the estimate. One tenth of the agricultural class would amount to 60,000, the total number therefore requiring support is 210,000 in a year of complete failure. If a second year of failure supervened these numbers would be increased by 100,000 cultivators whom we have supposed to be on the verge of destitution. The total population of the district is 950,000, the proportion of the destitute to the whole would be 25 per cent. in the first case and 41 per cent. in the second

Mr. Cornwall.—The proportion of field labourers thrown out of employ I should calculate at a rate somewhat in excess of the proportion of the crop failing. If one-third, one-half, or three-fourths of the crop failed I should expect to see three-eights, five-eighths, or seven-eighths of the field labourers lose their work, and if the same happened a second year the number would probably still further increase. Every working tenant would with the help of his family do as much as he could himself and prune all extra expenditure, and in the second year of distress he would redouble his efforts. Wealthy *zemindars* would be the only persons able to afford field labour, and they would probably have so much land thrown on their hands that they would be obliged to maintain a certain number of labourers; but in villages where the zemindars are poor the whole of the labourers might be expected to require State assistance.

Mr. A. McWebster.—I do not believe that an "accurate forecast" of the condition of the people during the approaching season following any more or less serious failure of the ordinary harvest is possible. The persons who, from the nature of their employment, the opportunities they enjoy of collecting facts bearing on the question of food supply (which is of course what regulates the condition of the people), and the large personal interest concerned, would naturally be those most likely to form an accurate forecast; but the great grain dealers themselves are often at fault, even when they have to look to market prices of a few weeks in advance for their profits, and have not to take into consideration the extremely disturbing factor of the probable out-turn of a harvest. I know of several instances in which grain dealers of large experience suffered heavy losses last autumn at Agra from a miscalculation of the food grain supply in the country. They made large purchases for a rise in prices, and in ten days afterwards a fall occurred, which continued. If men who have made grain-dealing their lifelong business, and who may be said to have inherited an aptitude for the trade, are liable to such errors in merely estimating the probable amount of the available stock of grain in the country at a given time, how is it to be expected that district officers can make an "accurate forecast" of what the condition of the people is likely to be during an approaching season? The idea is chimerical. Take the case of the rabi harvest of 1878. I venture to say that any district officer called on at the beginning of February in that year to forecast the prospects of his district during the "approaching season" would have based his calculation upon the expectation of a "bumper harvest," whereas the out-turn of the crop was not less than 50 per cent. below that of an average year. I do not think, however, that the impossibility of forming an accurate forecast of the condition of the people need prevent due and proper preparation for a famine. The district officer would naturally take into consideration the amount of the ordinary importation into his district of grain and the exportation from thence, and he might form some sort of approximate notion as to how his district was likely to be affected thereby, but this would be for the most part guesswork. I find it impossible to give definite answers to any of the clauses of this question, for it treats of a subject on which no definite knowledge is to be procured. I

should not say that a failure of one-third or even half of a crop would necessarily throw any portion of the population on the hands of the State for relief in all cases, though perhaps a failure of two-thirds of a crop might do so.

All would depend on the circumstances of the district in which the failure occurred. For instance, a district might usually grow so much grain in excess of the wants of its population as to be able to export largely in ordinary years; in case of a failure of the crop the rise in prices would check exportation, and there might still be sufficient food for the people even with a loss of one-third or half of the ordinary crop.

Mr. Spedding.—There are so many elements of uncertainty that any forecast of the future can only be vague and liable to be shown erroneous, while the slightest change may alter the conditions in the widest degree.

There are two points regarding which an estimate has to be made—(1), is the supply of food likely to be insufficient in itself to support the population; and (2), if not, to what extent may incapacity to purchase necessitate relief?

The first point, inasmuch as it presents certain fixed basis, may perhaps be decided sufficiently for an answer in the negative or affirmative. The gross food produce may be calculated from cultivation and out-turn statistics with some success. The minimum supply of food necessary to support the known population can also be calculated. The probable loss from bad seasons would I think be best calculated on each separate kind of crop, for the rainfall may be quite sufficient to give a good out-turn of one crop, while another dies from want of moisture. Of course, any such calculation is liable to be falsified by a fall of rain or partial rains affecting one part of the district more than the others, and will render such calculations more difficult. By deducting the probable loss from the average out-turn, a probable out-turn is arrived at, and it will be seen whether this is sufficient to support the population at minimum rates. The more difficult question of export or import and of previous stores then arises. The first must depend a good deal on the circumstances of the surrounding districts, whether more or less affected by scarcity and the means of communication. Municipal returns and the price of grain may enable some idea of the latter to be formed. In this manner I think it is possible to forecast the question "will there be a food famine or not?" so as to answer in the affirmative or negative with a fair chance of success, even though no very reliable figures may be obtained.

The second point it seems almost impossible to foretell. The total numbers of such people as belong to the classes which usually come on relief works and poorhouses may be roughly deduced from the census papers. But as a given supply of food is not applied to support only that proportion of the population which it can support, but is spread over all, each person decreasing his expenses in various ways; as prices depend not only on the supply and demand, but also on the prospects of the season; as the circumstances and buying power of individuals vary largely, it seems impossible to frame any estimate in figures.

Further, numbers of people able to maintain themselves will prefer to save what they possess when by doing a slight day's work they can obtain a larger meal than usual. In short, actual previous experience would seem to offer the only means of coming to any conclusion.

In this district it seems that there have not within the present century been any food famines, and it would need an excessively abnormal rainfall to cause one.

Taking roughly the Government rates for a bare subsistence of 4 *chittacks* flour for children under 10, 8 *chittacks* for women above 10, and 10 *chittacks* for males above 10. Although this is probably considerably higher than the rates on which many people live, and is certainly not below the mark, we get the following amount of food necessary for the population of this district:—

Children under 10, 596,457 at 4 chittacks per diem or 2½ maunds per annum - - - - -	1,491,142
Women above 10, 673,142 at 8 chittacks per diem or 4½ maunds per annum - - - -	2,929,139
Males above 10, 749,751, at 10 chittacks per diem or 5½ maunds per annum - - - - -	4,123,630
	8,543,911

or about 4½ maunds per head per annum. This agrees very closely with the municipal returns in ordinary years, and as it merely considers grain, and not the quantity consumed of fruits, on which many of the poorer of the population live chiefly for several months in the year, or fish, vegetables, herbs, &c., the estimate is probably well over the mark. In the answer to question 3, chapter I., I estimate the out-turn of food grains at 20,772,000 maunds. In round numbers, then, the population can be supported by 8,000,000 maunds, and an average out-turn will be 20,000,000 maunds. Thus estimating previous stores, export and import, three-fifths of the food out-turn may be lost and still leave sufficient food to supply the population. In addition to this there is a large import of rice from Nepal. This is, however, always liable to be stopped by action of the Nepal Government, and is mostly re-exported in ordinary years.

Colonel Fisher.—In a sparsely populated and poorly cultivated district like Garhwál, there is, as a rule, very little surplus production, and hence no export of grain. If, therefore, I estimated that half the average food crop had been lost I would conclude that the people had only three months stock of food to last them for six months, and the condition of affairs would be very critical. Experience tells me it is unsafe to count on reserve food stocks. As a proof of this I would mention that the people who purchased grain from Government stores in January and February last, and repaid it in kind last June, wish to repurchase from me now in July, to enable them to carry on till the kharíf is harvested, and this in spite of an exceptionally good rabi of wheat and barley last May. Instead, therefore, of calculating how many people would be fed by any balance of food in hand, I would consider it necessary to provide food for everybody, in the suppositious case above given, for at least four months. The power of trade to pour in grain at short notices in a district of 5,500 square miles covered with villages far removed from each other and inaccessible to pack animals would be extremely limited. I could only arrange for storage along main lines of road. In a country where the entire population is agricultural, money would always be procurable by the man who had a crop in the ground ripening for harvest; but of course by the field labourers, the urban poor and infirm dependents, or mendicants, money would, unless the State provided labour for those fit to work, be absolutely unprocurable. In the hills, though these classes represent but a small fraction of the entire population—certainly not more than 5 per cent., and need not cause much anxiety as to their many wants—if the food crops failed to the extent of one-third, I would expect to have on my hands about 5,400 people of this class; if half the crop failed, about 8,000; and if three-quarters failed, about 12,000. The harvest failing for two consecutive years, which is an event unknown in the history of Garhwál, would probably raise the total of these classes on my hands to about 16,000, for this figure represents all these are.

Colonel Reid.—Half the average food crop of the districts of this division would suffice for the support of the people, so far, at least, as to prevent their suffering seriously, supposing that there was no export.

It is of course known that natives in all seasons use mangoes and mahua largely as food, and in seasons of distress roots, berries, and herbs of sorts are extensively used to eke out the small ration of grain. I believe past experience has shown that the danger of a food famine all over the empire is extremely slight; that, taking the empire as a whole, a supply of food sufficient to feed the people has always been forthcoming; and it may be assumed that when, in any district with railroads and fair internal communications, there is an effective demand, *i.e.*, a desire to purchase combined with the means of paying for purchases, the quantity of grain required will find its way into that district.

The difficulty will, I think, always be the lack of money to purchase food.

J. J. F. Lumsden, Rae Bareli.—I know of no better means of estimating the number of such people than by basing our calculation on the ascertained results and experience of past famines. The number receiving State relief has always varied much in different districts in a famine-stricken tract; the degree of pressure, the class of the inhabitants, and the system adopted on relief works and in poorhouses will all affect numbers seeking State relief in different districts. In answer, however, to the direct question put in the concluding sentence of the question, I may say, that with a failure of 5 annas 4 pie in the rupee in one harvest, I should not consider special relief necessary at all. An 8 annas failure would probably bring 3 to 4 per cent. of the population, and a 12 annas failure 6 to 8 per cent., on the hands of Government for relief either on public works or in poorhouses; and if a similar failure took place in two consecutive years, I believe the numbers requiring assistance would in each case be from double to treble what they were during the first year.

Mr. Harington.—As to famine of food, the power of trade to bring in food is a far more reliable basis of calculation than that of the food stock in the district. It is only as a unit going to swell the general stock of the country that district stock is of much use as a basis of calculation. It is most difficult to get at what this stock is. Every effort is made to conceal the stocks in hand and to mislead inquirers. The actual out-turn being calculated, the amount exported is at present an unknown quantity. In this district the problem almost confines itself to the means of getting the people money to purchase food. This done, the trade will, in any set of circumstances at all likely to arise, do the rest. There is not likely to be a food famine so long as there is money to buy it. But increasing exports will inevitably cause a general rise of prices; great quantities of grain formerly available for local consumption will leave the district; and until a corresponding rise in wages takes place the labouring population may be subjected to both food and labour famine. A labour famine will occur in every year of scarcity. Its extent can scarcely be predicted on present data. *A two years consecutive failure of both the kharíf and rabi* crops to the extent of three-fourths, or even of half, might be expected to bring half, three-fourths, or indeed the *whole* population of field labourers, urban poor, and infirm dependents and mendicants on the hands of the State. Such failure is practically out of the question; could it occur, not 600,000 out of the 1,000,000 of this district would escape without assistance; not one of the classes named. As a fact, a bad *kharíf* is likely to be followed by a fair *rabi*; in which case a failure of one-third is not likely to bring 15,000 on the hands of the State.

Half might bring some -	20,000
Of two-thirds - -	50,000

These numbers would be at least doubled if a second failure of the kharíf followed. A failure of the intermediate *rabi* might be expected to include the whole of the classes named, and most of the poorer agriculturists besides. The total numbers seeking relief would then probably not be less than from 500,000 to 750,000.

Mr. Quinn.—I place little reliance on figures professing to give the food stocks in a district. I do not believe that an estimate, even approximately accurate, can be made, and calculations as to the length and severity of distress based on such data are sure to prove most delusive. The data which can be ascertained with considerable accuracy, and from which sufficiently accurate conclusions can be drawn, are the amount of food crop lost, that is to say, the actual out-turn as compared with the average out-turn; the class and proportion of the population, who live wholly or in part on these food grains; whether they live on them during the whole year, or only during certain months; whether, failing these food grains, other cheap food is procurable; whether the district ordinarily produces more or less of these food grains than it consumes; whether this export or import will probably continue; whether the preceding years have been bad or good ones; what is the prospect of the ensuing season; what is the normal condition of the people. To ascertain the amount of grain held in stock by cultivators and dealers is quite as impossible as to ascertain their profits. Everyone tries to mislead the authorities. The attempt is likly to create a panic, and those conducting the inquiry find ample opportunity for extortion. Supposing, however, that a fairly accurate return has been obtained it may be soon rendered useless by unforeseen circumstances. Where a district is well supplied with communications, especially railway communications, export and import are affected by the prices ruling in distant grain depôts. Last year Oudh export fluctuated with prices at Benares, Calcutta, and Bombay. The stock may also be largely reduced by grain withdrawn for seed. Last year our return of food stocks had only just been completed when an abundant rain fell, the result being that instead of *rabi* being sown in only about one-third of the ordinary area the area actually sown was fully half more than usual. Our stock return then, whatever its previous value, became utterly useless, unless supplemented with an estimate of the amount of food grain withdrawn as seed.

The measures I adopted were to open poorhouses at each of the tahsíli towns. This secured the supervision of a tahsildar and hospital assistant. Municipal works sanctioned in the budget were taken in hand, and additional works projected; the district engineer was instructed as a tentative measure to take on at a low wage all who applied for employment on a few selected district works. When it was found that people flocked to these works, notwithstanding the low wage, and that many came from a distance, a few regular relief works were opened. This system of only extending relief works as the necessity for them was proved worked well. The class who apply for work, their physical condition, the proportion to the whole borne by men, women, and children, and the distance the applicants have come from, require to be all carefully watched. As long as it is possible, I prefer that the people should be given work within a reasonable distance of their homes, and have at least the option of returning to them at night. When famine increases in severity large works must be set on foot, and this requires the assemblage of workmen in large bodies. To these works I should draft off the able-bodied men and women, under the inducement of a higher wage, leaving the weak and infirm, and those encumbered with families to be employed on petty works near their homes; but as regards an absolute rule that all relief labourers are to be employed in large bodies and to be hutted, it should be borne in mind that huts are built for those who leave homes of their own; that the sick, the old, the infirm, and young children, have all to be dragged to long distances from their homes, or else a special and expensive village organization has to be made for their maintenance and attendance, during the absence of their natural sup-

porters, and that camps if epidemics are to be guarded against require special sanitary arrangements and medical supervision. I do not think it would be wise to incur all this expense, and to put the people to so much hardship, simply to secure a test that those relieved were really in want. The special works to be opened should be selected by the district officer in consultation with the district engineer. All relief works should be under the Public Works Department, and the head of the district should be generally responsible.

BENGAL.

Mr. Barlow.—In the province of Behar we are absolutely without the data necessary for making an accurate forecast regarding the food supply. All the districts are permanently settled, and we are deprived of the information obtained under the tahsildari system of the North-Western Provinces, or the ryotwari system of Madras. Our general survey, which is 30 years old, supplied in certain cases only the total amount of land cultivated and culturable, as distinguished from waste, and without detail regarding crops. We know nothing about the advance made in cultivation, nor can we say how the land is distributed under the different kinds of crops, and what is the amount of produce. It is truth, therefore, to say that the "average food crop" here is an unknown quantity.

It seems to me that little is to be gained by guessing at the proportion of the population likely to come upon the hands of Government under given conditions in regard to the failure of crops. The only kind of information that would furnish a fair basis for a calculation in this direction would be the details as to castes, general circumstances, and numbers of persons who, during previous famines, have accepted relief in food and money. These, again, should be compared with well ascertained particulars respecting the extent of crop failure and the course of the distress that followed it.

According to the system upon which we worked in 1873–74, inquiries with a view to action to avoid famine were made early, and before the physical condition of the people would be likely to show much effect from the failure of the food supply. The declared policy of Government that famine is to be met and relief undertaken before the population is brought into a generally reduced condition will, in the view I have taken, tend rather to confirm the position that in making a forecast for an anticipated season of distress, we base our judgment upon the fact of failure of the food crop, and conclusions drawn therefrom, and not upon any ascertained facts with regard to the state of the people themselves. I do not say that this can be easily avoided; but it tends to increase the chance of mistakes being made, and may help to account for them when they are made. Under the system of what I may call working downwards to distress, the district officer has ample and quick notice of apprehended misfortune. Personal communications with, or reports from, police officers and others tell him that the crops have failed, and the poor must suffer, almost before it has been decided that, according to the rain-fall, the season has been irregular. I may mention that, during the last few years, the annual outcry that the season has been abnormal and is likely to prove disastrous has become a regular habit. These warnings are listened to with more or less attention, as the general appearance of things is felt to be threatening; and the information obtained is tested as far as possible by the personal observation of the district officer and his subordinates, who, if necessary, take care to examine the state of the crops before they are taken off the ground. Government having undertaken to protect the people from famine, there can be now but little chance of any reasonable alarm escaping the notice of the district officer. Real difficulty commences when the district officer, having finally resolved that distress is coming, proceeds to determine the precise character of the same and the action that must be taken, and to this end attempts to guess at the number of people likely to require relief upon the basis of the proportion of crops lost. I wish that a method could be devised whereby the ascertained condition of the people and the number likely, according to their habit of life, to become pauperized, even if this be worked out for limited tracts only, might form a clearer element in the calculation.

A district officer would, I suppose, judge whether distress is due to temporary or local scarcity, or likely to be the forerunner, of very general severe distress ending in famine, by observing the extent of failure of crops and the range of prices in his own district and elsewhere. He would also consider whether the last year or two had been years of plenty or otherwise, the state of stocks, trade, &c. As regards the state of crops and prices, I think that existing means are sufficient for keeping officers informed of what is going on; what with weekly notifications in the "Gazette," newspaper reports, and communications (personal) between officers, and, lastly, the action of Government itself early in the season, when times become very threatening. The state of stocks and trade under the Bengal system is a knowledge to which the district officer cannot obtain. Government are collecting statistics of river trade at registering stations, and they receive the railway traffic returns. These may be conveniently supplied to local officers as soon as a means has been devised whereby they may know something about the produce of their districts, but not beforehand.

Colonel Burn.—Generally speaking, half a food crop will about suffice to feed the population where food crops predominate, and where other grain exceeds food grain, the price of it will have about the same effect, on importations, if food grain can be imported. I do not consider any State relief would be necessary if only one-third of food crops failed; if half failed, half the field labourers and urban population would require some help; if three-fourths of crop failed, three-fourths of field labourers and urban population and all infirm mendicants.

Mr. Worsley.—My belief is that all famines in Behar are occasioned by drought, and that the only classes of the people which should be extensively relieved or assisted by the Government are the agriculturists and field labourers. In making a forecast of the condition of the people during an approaching season of scarcity or famine, I should ascertain by a village to village inquiry what proportion of the crops had failed in each village. I should consider the quality of the three previous harvests and the probabilities of reserve stocks being larger or smaller than they would ordinarily be supposed to be at the particular season of the year. I should assume an average out-turn of grain per beegha for ordinary years, and calculate the probable out-turn in maunds of the harvest that had failed and the probable out-turn of the next following harvest. Adding these quantities to the reserve stock, I should calculate what proportion of the whole population the total stores would maintain until the reaping of the *bhadoi* harvest at an average daily rate of three-fourths seer per head of the population. If there appeared likely to be a considerable deficiency of food, and there were little prospects of prices being kept low by importations, I should recommend that *provisional* arrangements be made for relieving (for the ascertained

period), by a joint system of advances and relief works, that proportion of the population for whose support local supplies would not suffice. The majority of the queries contained in question 5 cannot be answered from my own actual experience, and I think it well to express my opinion that conjectural estimates are simply useless. In 1874, Seetamurhee sub-division suffered famine from failures of harvests scarcely more extensive than the failures which occurred in 1875–76. In the latter year, owing to large importations of food (some 15 lakhs of maunds being imported to the district), very low prices and an excellent mango season, the people of Seetamurhee sub-division managed to support themselves without any assistance from the Government. In 1875–76 the out-turns of the three harvests in that sub-division were *bhadoi* 8 annas, *aghani* 5 annas, and *rabi* 8 annas. The out-turn of the *aghani* harvest was ascertained by a village to village inquiry made by selected native officers and by myself. On 15th December 1875, I estimated that 152,300 persons of the agricultural and labouring classes would require assistance for three or four months in 1876, and that 5,000 paupers would require charitable relief; but, as I have already stated, a combination of favourable circumstances subsequently upset all my calculations. Last winter the rice crop (the principal harvest in Seetamurhee sub-division) failed in the sub-division to the extent of nearly two-thirds, and was followed by a 10-anna rabi crop, but importations and an unusually fine mango season have again enabled the people to subsist on their own resources. Considerable privations have been undergone no doubt, but still no instances of starvation have occurred. I presume that so long as failures of crops are not very extensive or general, and there is no fear of a general famine, the borrowing powers and credit of the lower classes will stand them instead. The peasantry, however, from the accumulated pressure of debts, and from their want of tenant rights, must always remain under the existing state of the rent law in a very low condition.

Mr. Magrath.—No accurate forecast can be made, nor, supposing the crop be estimated correctly, which it cannot be till just before it is cut (hail, blight, insects, and floods being all possibly destructive influences), the extent to which exportation may take place is a factor which the district officer has no means of calculating. This he cannot tell until he knows what the people into whose hands the grain has fallen will do with it: they may export a great part of it, trusting to buy cheaper hereafter; they may have to part with it to mahajans who will hoard it for a rise or send it elsewhere; they may have to advance it to their labourers to keep them going till next crop. This, if there is a prospect of the next crop being good, is what they probably will do. Nothing but the roughest calculation can be made, and the holders of the grain can upset that calculation at any moment by the course they happen to take.

It entirely depends on the capabilities of the country. If it is a rich country where stores are kept, it will be sufficient to give work and wages for that work to the poor and trust to traders to import. If the country though poor has large dealers, Government by giving traders advances and starting work for the poor could supply the want; but if as in Madhubanni there were no traders, Government must import and sell as well as pay wages. The estimate of stocks is always very difficult, nay, anything like an accurate estimate is impossible. The very vaguest estimate only can be made. The power of the trade to bring in more is always easily estimated. If you have big traders in a large way they can always, if furnished with money at low interest, provide any quantity of grain if given sufficient time. The estimate of the number of persons who will come on the State for relief can be roughly estimated from the census list of castes (the tables of occupation are nearly if not entirely useless). Anyone acquainted with the district would be able to pick out the poor castes, and those who mainly form the classes of labourers without land or other means, and the artizans who will be without means, and according to the apparent severity of distress how large a proportion of mendicants will come to the State. In no case will they all come; a proportion even in the worst times being supported by the rich. Thus in Madhubanni I calculated that about two-thirds of the population would be eventually on relief, and that it would not be safe to calculate for less than an average of half the population during the months which must elapse before a fresh crop would come in. As a matter of fact the numbers on relief rose out of a population of less than 700,000 to more than 500,000, and from March to July, when advances were made to enable the fields to be cultivated, the numbers never fell to 200,000.

The estimate should always allow a margin, as was clearly shown by the fact that in 1874 three days delay in the fall of the rain would have ruined the rice, maruá, and janerá crops, and prolonged the famines till January or February. If one-fourth of the crop remained in any district that I have yet visited it would suffice to support the people though on scarcity rations; provided there were no exportation, I should expect to see 20 per cent. of the number of labourers and poor artizans and the same number of the beggars on State relief but not more. Of course, if as was the case in Madhubanni a large portion of the small crop was sold elsewhere, the conditions would be entirely changed. If this continued for a second year, the whole of the urban and rural labourers would be on relief, as the farmers would not have the grain to pay their labourers with, and the bulk of the beggars would also come on relief.

Mr. Hodgkinson.—It is impossible in a report of this kind to enter at length into all the contingencies which may arise. I will, therefore, confine myself to those which depend upon the condition and circumstances of the district crops only. If the bhadoi is a good crop and the rice fails, there will not be general, but somewhat severe local distress in rice tracts during December, January, and February, until the rabi crops are reaped, and perhaps also in May and June. If the bhadoi is an average crop, and the rice half an average crop, I do not look for any remarkable distress, provided the rabi crop is a good one. If the bhadoi is only three-fourths of an average crop and the rice crop a fair one, there will similarly be no scarcity, though in places there will be pressure in October and November. If the bhadoi is half an average crop, only relief works will have to be specially started in October and November to continue, until the rabi is cut, if the rabi harvest is a good one. If the rabi harvest is also a bad one, one-tenth of the population will be on our hands in April, May, and June. With less than half an average yield of bhadoi, unless the promise of the rice is very good, we shall approach a famine very nearly in October and November. The rabi crops will have to be very good indeed to prevent a far worse state of things than occurred in 1874.

Mr. Toynbee.—This seems to me the most important of all the questions in the series, and to involve, if it could be answered fully, the solution of every difficulty, except the financial. For the purposes of an *accurate* forecast it is clear that such figures as are used as the basis for such a forecast must themselves be accurate, and quite beyond the range of guess work and doubt. A district officer to make such a forecast,—(1) should *know*, not guess, the exact amount and nature of the food grain grown in, exported from, and imported into the district year by year; (2) the population, and their actual average consumption per head being accurately known, a *reliable* estimate of stocks in hand would thus be arrived at; (3) the estimate of production in the year of failure which must be more or less guess work (and which the people themselves would exaggerate as much as possible), plus that of the stocks in hand, would give

the district officer a fairly safe guide as to the amount of grain in his district. But unfortunately a district officer in Bengal has no means of getting at any reliable figures whatever; the population as counted during the Census of 1872, is known with something like accuracy; but as it was not a census taken for the special purpose of famine administration many important details are wanting. He has no means of ascertaining the actual out-turn of any given harvest, he can only guess at it. There is no organized system of inter-district traffic registration, and it is therefore impossible even to guess what grain goes out and what comes in. If there be a railway running through the district, the difficulty is considerably less, as the traffic returns form a good general index to the exports and imports of the district. I should therefore say that, not having sufficient data for reducing his prognostications of distress to tabular forms and figured statements, a district officer would be wise in his generation if he confined himself to acting on the general, and almost intuitive knowledge which every officer has who moves about freely among the people. The conditons of each district in Bengal vary so much, there are so many local peculiarities in each, so many extraneous circumstances which affect the question of the distress in any particular locality, that it is impossible to lay down any fixed rule or course of action for any district. What a district officer should do, if scarcity threatened his district, would, in my opinion, be this:—He would make over the current duties of his office to his joint magistrate or some other senior officer, and move freely about among the people, watching the state of prices, the movements of grain along the principal traffic lines, the general condition of the people, and especially of those coming to the works which he would at once open from road cess funds. If there was no trade or private enterprise, he would arrange for the supply of a small reserve stock of grain at some central and accessible place, and so on. He would instruct his sub-divisional officers to do the same. A district officer in time of famine is somewhat in the position of a general arranging beforehand the plan of a military campaign, he has to change his tactics with every change of move on the part of the enemy. He can fairly well arrange the outlines and principles of the campaign, but not its details.

Mr. O'Donnell.—I should not attempt an estimate of food stocks with the present means of collecting information. I would not feel justified in forwarding an irresponsible guess to the Government; yet what more accurate is now possible. I remember in 1874 the Collector of Tirhoot and one of his sub-divisional officers differed on this point in the proportion of seven to one. Perhaps the very greatest service that the Famine Commission could do is to press, with almost any strength of language, the necessity in Bengal of agricultural statistics, locally and continuously compiled.

The last part of the above question runs thus,—"What numbers of these classes (field labourers, urban poor, and infirm dependents) approximately would you expect to have on your hands, if the food crops in your districts failed to the extent of one-third, half, or three-fourths? and if this happened in two consecutive years." I simply cannot attempt an approximation. These numbers would depend on an infinite number of circumstances, which it is now impossible to predicate. In considering the case of Sarun, one should also want to know the condition of Chumparun and Goruckpore, whence it draws much of its food supply in certain years. Does the question mean that some one crop, which in itself constitutes a third or half the entire food supply, totally failed, or is the third or half to be taken out of each crop, or all the crops? This difference between these two conditions would be immense in the present year in Sarun. If even one-third of the total food supply of the year were now cut out of the *bhadoi*, I believe not only the above-mentioned classes, but crowds of small farmers, would want abundant relief. The district, however, could stand a loss of one-third of all the crops of the year, if the *bhadoi* were generally secured. It would also make a great difference as to the time the failure occurred—a failure of the *rabi* for instance, if severe, would in all years result in the greatest distress, because the period from the harvesting of the *kharif* to the reaping of the bhadoi is so long. In fact suppositional questions, in which only one out of a dozen possible accidents is given, cannot be answered with even a very limited accuracy. At the same time, I may record my opinion that a failure of three-fourths of the crops in Sarun is so entirely improbable that it need not be considered; and that not only in Sarun, but in the whole of Behar, both north and south, no famine, or distress approaching famine, has resulted, except after two consecutive years of failure of crops.

Mr. Finucane.—If I were to form any estimate of old food stocks on *á priori* reasoning, I would assume,—

First.—That the population could make their ordinary arrangements for subsistence up to the time of reaping the crop of serious failure.

Second.—That, foreseeing the approaching failure for some months before the new crop is reaped, merchants and others would keep in reserve some stocks, which (were it not for such failure) would ordinarily be thrown into the market or exported during the month of impending and foreseen failure, that from motives of prudent forethought consumption would be also lessened during those months, and that the savings from these two sources would be probably sufficient to maintain the population for two months after the reaping of the new crop.

Third.—I would next add to the quantity represented by two months supply the produce of the crops which partially failed, and would then consider how far this quantity sufficed for the requirements of the population during the interval between the reaping of the short crop and the reaping of the next food supplying crop. Whether the supply which I have put down at two months would in any given case suffice to maintain the population for one or two, or for how many months, is a question the solution of which could be guessed at by people of local knowledge, and ascertained by inquiry from merchants at the chief trade centres of the district, and from house-to-house inquiries from ryots in selected specimen areas. I now propose to take concrete examples in the Dinagepore District and in the two northern subdivisions of Durbhunga, and apply the above method, adopting Mr. MacDonnell's figures as to areas and population. In both these districts, but especially in the former, winter rice is the chief crop, and the staple food of the people. On this crop (or its proceeds) the population subsists from the beginning of January to the end of August. In August the bhadoi crop is reaped. This crop may not in ordinary years be quite sufficient to support the population from the time it is harvested, to the cutting of the next winter rice crop, but experience has shown that in years when the great winter rice crop fails, a larger area than usual is sown under the bhadoi crop, the produce of which in such years may be assumed sufficient to support the population from and after the 15th of August to the reaping of the next rice crop. Assuming, then, that the ordinary food supplies of 1873 were sufficient to maintain the population up to the middle of January, that two months supply in addition (consisting partly of savings in ordinary consumption during the previous four months, and partly of reserve stocks which, were it not for such failure would have been exported) was also available from the stocks of 1873 the ordinary food supply of 1873 would last till 15th March. To meet the local consumption of the five months 15th March to 31st of August there would be the produce of the rice crop reaped in December and of the rabi reaped in March and April. It is there-

Bengal.

fore only necessary to see how far that supply is sufficient for the five and a half months.

The following statement shows the deficit calculated on this basis:—

Name of District.	Proportion of principal Crop of serious failure in 1873 to ordinary out-turn of such Crops.	Total cultivated Area in Acres	Annual Food Out turn.	Annual Consumption in round numbers.	Monthly Consumption in round numbers.	Requirements for five and a half Months, i.e., from 15th March to 31st of August.	To meet Requirements of these Five and a Half Months. Winter's Rice Crop of 1873-74.	Rabi Dry Season Crops.	Total.	Difference between 7 and 10 columns, being deficit.	Quantity of Government Rice imported.	Quantity imported by private Trade.	Actual Quantity of Government Grain disposed of.	Remarks.
1.	2.	3.	4	5.	6	7.	8.	9.	10	11.	12.	13	14	15.
		Acres.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.					
Dinagepore - -	4annas or 1/4	1,688,177	Winter rice - 498,000 Others 86,000 584,000	326,000	28,000	154,000	124,462	1,452	125,914	28,086	39,674	Nil	31,513	I take no account of seed stocks, because they would be kept over and above the two months supply which I assume is saved from old stocks. The "two months supply" is of course a purely empirical quantity which would have to be ascertained by local inquiry in each case.
Durbhunga, Madhubani, and Sudder sub-divisions -	1/4 1/4 1/2	1,254,980	Winter rice - 425,000 Others 243,000 668,000	414,000	34,500	181,125	86,756	25,000	111,757	69,369	115,906	Nil	77,156	

From these data and calculations, the following conclusions are suggested:—

First.—That in food exporting districts in which winter rice is the chief crop and main food staple (the failure of which crop alone can cause serious scarcity in such districts) it may be assumed that the population can subsist on the produce of the previous year's crops at least up to the middle of January. Supposing the bhadoi next preceding the winter rice of serious failure to be an average crop. This is obviously the case, and supposing the bhadoi a failure, it is none the less the case, because the bhadoi can be an absolute failure only in case of there being no rain right through from June to August, and can only be a serious failure in case the deficient rain-fall occurs at time of ripening of the crop, *i.e.*, in July and beginning of August: in either of which contingencies people are forewarned and reserve stocks ordinarily intended for export. In the district of Dinagepore and the north-east of Durbhunga the rabi food supply being insignificant, the failure of the rabi may also be practically disregarded in considering the food supply available at the time of harvesting the winter rice.

Second.—It may also be assumed when the winter rice crop seriously fails in a district of this class that a supply would be forthcoming from the stocks of the preceding year, sufficient to maintain the population for some time after the winter rice harvest. The exact length of time can only be ascertained by local inquiry in each case. The experience of 1874 showed that this time was two months in certain districts; but the conclusion that two months supply from old stocks may be expected in any future case though suggested is not warranted even for those districts.

Third.—That owing to extension of area sown under the bhadoi crops next succeeding the rice crop which failed, the proceeds of the bhadoi will be sufficient to maintain the population from, say, the end of August to the reaping of the next winter rice crop.

Fourth.—That, therefore, in the case supposed (which is the ordinary one) it is only necessary to consider how far the out-turn of the short rice crop suffices to maintain the population for five and a half months.

Fifth.—That in Dinagepore a five-anna winter rice crop suffices for this purpose, and that in Durbhunga a six-anna rice crop supplemented by an ordinary rabi crop would suffice. These results tally with the statements of persons possessed of local knowledge. Assuming the bhadoi succeeding the short rice crop also failed, then the deficit, as worked out in the table, would be increased by the requirements of local consumption for the interval between the harvest time of the bhadoi (say middle of August) and the harvest time of the next winter rice, say beginning of January; and if this winter rice crop again failed, and the failure were very serious, the results would be disastrous and the deficit enormous.

It is unnecessary to pursue the inquiry further in order to quantify deficit. In a district the chief food products of which are rabi crops (wheat, oats, &c.), I would follow the same system in framing an estimate, with this difference that, instead of making my starting point the harvesting of the rice crop, I would concentrate my attention on the rabi, and consider how far the short out-turn of that crop was sufficient to feed the population during the interval between the reaping of the rabi and the reaping of the next good supplying crop. As, however, I have little knowledge of such districts, I refrain from making any such calculations. Supposing private trade equal to the task of importing the quantity necessary to make up the deficit, the maximum expenditure on the part of the State would evidently be the price of that quantity. The State expenditure need only equal the price of the deficit quantity in the extreme case where none of the consumers of the imported grain were able to purchase without State aid. The minimum State expenditure would be where the people were so prosperous that all could purchase from previous savings. The necessary State expenditure may vary, therefore, from nothing at all up to the total price of the deficit quantity of food. What the amount of expenditure within these limits, and what the number of persons may be who would require State aid to enable them to purchase food in case of serious failure in any given district, are questions the answers to which depend so much on the comparative wealth of the cultivating classes, the heaviness or otherwise of prevailing rent rates, the leniency or the reverse of zemindars in realizing their rents in the year of scarcity, and on numberless varying local circumstances of the kind, that I think estimates based on the assumption that certain classes will require State relief, or on similar data derived from census returns showing the number of those classes, cannot be relied upon. The only guide I can see in these matters is the actual experienced results of past famines, which, at best, is but a rough guide.

The following tables show the proportion the numbers who received State aid bore to the total population in the circle of which I had charge—Patiram Circle, Dinagepore District:—

		Per-centage on total.
Total population -	66,866	100
(*a*.) Highest number at any time on relief roads -	8,000	12·1
(*b*.) Highest number on gratuitous relief - -	2,608	3·9
(*c*.) Highest number on semi-gratuitous relief -	1,806	2·6
Total of (*a*), (*b*), and (*c*), being highest number receiving State relief direct - - - -	12,414	18·6

The 12 per cent. included in (*a*) does not, of course, represent the real number of persons who received State aid to enable them to purchase food. The female members of the relief labourers families, as well as young children who did not come on the works, must be also taken into account. It would therefore seem that about 30 per cent. of the population received State assistance exclusive of those who received indirect aid by being enabled, in consequence of Government importations, to purchase food at lower rates than would have otherwise prevailed. I should think no State relief would be necessary in Durbhunga or Dinagepore if the winter rice yielded an eight-anna crop or more. Little relief would be required if the winter rice yielded a six-anna ($\frac{6}{16}$) of an average crop, provided zemindars were prohibited from realizing rents in such years. The case of the food crops yielding only a four-anna (one-fourth on average) crop, or less, being that of 1874, has been already discussed. Mr. MacDonnell's method of figured estimates has been objected to, *firstly*, on the score that the calculations are beyond the power of the human intellect; and *secondly*, on the score that the method is in itself logically vicious. It seems to me that the calculations are simple, provided the necessary data are available, and that it is not beyond the power of Government to make them available. The method appears to me to be the deductive method verified by the results of specific experience, which is precisely the logical method prescribed for all inquires into social phenomena by so great a logician as John Stuart Mill. Moreover, the objections made to the method are objections to the possibility of framing any estimate at all on any method, and are of little force unless it be maintained that the district officer should attempt no forecast of the food requirements of his district, but merely wait and let things take their course.

Mr. Metcalfe.—The great lesson learnt in the famine of 1874 was that the lines of internal trade in India are so marked; and in the absence of railways trade is so dependent upon river communication, and river communications so dependent upon seasonable rainfalls, that a district which for a number of years has always been an exporting district will suffer very great straits from scarcity of food before the direction of trade will turn and convert an export into an import trade. When the rivers are dried up it becomes impossible to convey grain into the interior, except by land carriage which would eat up all profit.

As a general answer to the question put, without entering into minute particulars, I should say, if half the average food crop of a district was lost, and the district was an exporting district, that there would be quite sufficient in that district for its requirements, presuming that the district yielded two crops in the course of the year.

I should assume that there is always a one-year supply of grain stored in a district. The habits of natives are so stereotyped, that I should assume that, under the conditions of a drought for two consecutive years, the mahajuns would, in the case of a district difficulty of access, either wholly close up their stores or issue grain at famine rates only.

To the question how an estimate is to be framed of the number of persons who in a year of scarcity would probably be able to purchase food, and of the number who must be assisted by the State, it would probably be an approximately accurate calculation to assume that two-thirds of the population of an ordinary agricultural village would not be able to purchase food, and that one-third would. But there would be found villages in which the whole population would be able to purchase food. It would be, in my opinion, safer to estimate for the quantity of food required for the whole population of the famine-stricken tract than for the number of people who are likely to require to purchase it; and in addition to this, allowance must be made for outsiders, for this reason that famine and relief works invariably attract people from neigbouring districts, and the local population is thus largely increased by people who really do not belong to the district; even if the rate of wages is so low as not to render it worth their while to stay, yet numbers of people will probably have entered the district and increased the population before the rate of wages fixed by Government becomes known.

Mr. Kirkwood.—Calculations as to the extent of relief which will be required must not be built solely upon the extent of the failure of the crop. The extent of the assured failure must be read with a certain reference to the rise in prices and to the classes of persons seeking relief. Given a partial failure of crops, a famine need not ensue if the crops in the neighbouring districts are good and communications are easy. When a district is ordinarily a surplus producing district, the district officer must inquire first of all what proportion of the usual average crop is kept for consumption. He must deduct the larger portion of his ordinary exports from the average outturn of his crop; he must bear in mind whether from any cause, such as excessive export or from scarcity, his district supplies have been already in part depleted. If thus calculating he can regard the stock which this harvest will leave for local consumption as being three-fourths of the stocks consumed locally in an ordinary year, and the neighbouring districts are not worse off, he may conclude that though here and there a small expenditure will be required to meet distress there will be no starvation. If much less than this is available, he must apprehend a severe scarcity, but one which will probably be met by money expended on works, and, if there are facilities for communication with more prosperous parts, without any Government importation of grain. But if only half the stocks ordinarily available for consumption are likely to be available, and even before that if prices lend a gloomy interpretation to the failure. and of course when the probability is that there will be available for consumption only one-fourth of the stock ordinarily available, Government should, in my opinion, import grain and store it in the more distressed and remote parts—small stores at first, if there are great facilities for importation and there are elsewhere crops readily available, and larger stores in proportion as those remedial influences are less apparent. The object of Government in making such imports should be to keep the price of grain in the distressed parts from passing a fixed high price, which limit should, I think, be three times the ordinary price in a prosperous year.

Government will find it more necessary to import into an ordinary surplus producing district than into one which ordinarily imports a portion of the food required for consumption, because export operations are not readily converted into import ones, whereas existing import operations can generally be easily expanded. It will be long before private import operations percolate into the more remote parts of an ordinarily exporting district. It is there that in ordinary years prices are lowest: it is there that in years of famine prices rise highest. It is not only the actual failure of crop, or the actual dearness of food, which must be considered, but the proportion which that dearness

Ch. II. Qn. 5.

Bengal.

bears to ordinary prices must also be taken into account in gauging the distress.

The district officer thus armed with necessary information, and ready at all points for the crisis, should probably gauge the actual extent to which relief will be required more by the prices prevailing after the temporary lull occasioned by the reaping of a scanty harvest is over, and by the classes seeking for relief than by any other circumstances. When those who are known to have some amount of cultivation and are not purely hired labourers begin to seek for relief, he may be sure that bad times are at hand. But his preliminary arrangements before the reaping of the harvest may thus be summarised—Where there is only a one-third failure assured he need take no steps, but about April and May should be on the look-out for occasional cases of distress; where there is a half failure assured, he may be sure that he will have to take earlier and more vigorous measures, and he should without loss of time have a limited amount of grain (purchased elsewhere and imported) stored in the more remote parts. With an assured failure of three-fourths of the crop, he should commence at once to pave the way for extensive relief operations. A village inspection should be set on foot in November (if the main crop, which has failed, is harvested in December and January), the names of all those actually needing relief, or likely to need it, should be entered in three or four categories according to the method of relief which may be deemed suitable for their cases, *i.e.*, by earthwork as able-bodied labourers, by earthwork as light labourers, by spinning, by weaving, by gratuitous relief. The date from which the relief would probably be required should in each case be stated. Useful works should be at once opened in many parts of the district, establishments not large at first, but capable of ready expansion, should be entertained, a separate account department should be organized, local committees should be formed, private charity should be stimulated, and a considerable amount of imported Government grain should be stored in the more remote parts.

In my opinion Government should so act that in no famine should prices ever be higher than three times the ordinary rate. How and why this should be done will be explained in the proper place, and in replying to questions 33 and 39 in chapter III. With prices kept at that figure, if the failure is over any considerable area and extends to three-fourths of the crop, I should expect at the worst time to have about 16 per cent. of the affected population on my hands for relief. That per-centage might easily swell to 50 per cent. unless prices are thus restrained. I do not mean that 50 per cent. of the population over any large area will actually be receiving relief; many will die who would otherwise have lived. Thus in Kaladgi District (1877), where prices rose in the marts to six and eight times those ordinarily current (and, therefore, higher still in the remote parts), the highest number relieved was only 17 per cent. of the population, while the Census taken in 1878 points to a conclusion that 20 per cent. of the population of 1876 were missing. Many more than 16 per cent. of the population will actually partake in the relief given to a daily average of that proportion. For women and children all to some extent partake in the wages of their male relatives, field work will be done one day and the relief works attended to the next, and so on.

Baboo Hari Mohan Chandra.—I was a relief officer in this district in 1874. At the first stage of the famine I gave the applicants work close to their homes; but when the works close to their homes were finished, and the number of applicants increased with the increase of the distress, I opened works at 12 or 15 miles distant from their homes, where they went without reluctance and worked. No compulsory means were needed; they went of their own accord. In my opinion the distance test should not be applied at the beginning of the famine; when the number of applicants increases with the increase of the distress, the distance test should then be applied. The people of this district are so averse to leave their homes that I consider a distance of 15 miles a quite sufficient test of their need. My labourers used to stay six days a week away from their homes, and on the seventh day they used to come home once, and again go back to their work. They had made huts by the roadsides to stay there and work. The members of each family had a hut of their own. The labourers were never compelled by me to go to a distance and to stay there, leaving their homes; but they were compelled by their own need to go to distant works and stay there and work. I strictly enforced the labour test, which I think was quite sufficient to keep away persons who were not in distress.

Bombay.

BOMBAY.

Mr. Hewlett.—As regards the amount of food stock in the country, I do not believe any very accurate estimate can be formed. The *Baniahs* and the rich cultivators are in the habit of storing grain in large earthern jars, which are buried either within the enclosure of their houses, or sometimes in the roadway outside. One thing is certain, that however severe a famine may be yet the food stock stored in the country would be sufficient to supply the people with grain if only the owners would open their stores and sell. During the height of the famine, when the price of grain was at its highest, the merchants at Itkal, in one of the worst famine districts, Kaladgi, exported grain in large quantities to Ameengurh, where they obtained higher prices, and when the famine was over it was found that large stores were available everywhere.

Mr. Spry.—No accurate forecast of the condition of the people could be made, at least I know no data which would give a basis for it. Only an approximate one could be made, and that would be very unreliable. Forecasts of this nature were called for by Government from the officers in each affected district, when the famine of 1876 first began to develope itself, but they turned out very inaccurate I think.

As regards the Kaladgi districts, the average food crops there far exceed the wants of the people; therefore, if even half the food crops failed, there would still, I think, be sufficient, but no margin for storing.

Mr. Propert.—I fail to see how a forecast of any value could be made by any district officer. I would far rather arrange for the wants of the district as the season advances. In the case of Khandesh during the past two years of scarcity, my own anticipations were so often at fault that I have ceased to believe in forecasts. In the season of 1876 I have no hesitation in saying that the general crop of Khandesh failed to the extent of between $\frac{1}{2}$ and $\frac{3}{4}$, and in 1877 to the extent of about $\frac{1}{3}$, and yet at no time had we more than 22,000 persons on relief works, out of a population of about one million, and at the same time the revenue for 1876 was collected with the exception of only Rs. 21,289-8-3, while for 1877 remissions amounting to Rs. 11,099-1-2 only were granted.

From this I argue that, if in spite of the general poverty of this province the general results of the severe scarcity were (if I may use such an expression) *so satisfactory*, it becomes in my opinion totally useless to waste one's time in making fanciful forecasts.

Mr. Norman.—The Poona District is bounded towards the west by the Ghauts, and along this range the periodical rains have hitherto never been known

to fail. It is, therefore, impossible to conceive that there could be serious failure of crops over the whole area of the district for two successive years. In the more eastern talukas the crops in 1875–76 were very bad, certainly not more than half the average, and the same was the case in 1877–78. In 1876–77 there was, as nearly as possible, an absolute failure. Irrigated lands alone produced anything, and, owing to failure of water, much less land than usual was irrigated. Notwithstanding this state of things, there has been no absolute failure in the grain supply. Prices have ruled higher this year (1877-78) than in the year of famine, but the stocks have been ample to meet all demands. Had the railway been able to carry all the grain consigned to Poonah in 1876–77, it is most probable that the stocks would have been larger, and prices would consequently have been easier. I argue, therefore, that as far as this district is concerned there is no fear, even under the most unfavourable combination of circumstances of any failure in the grain supply. Prices, no doubt, may rise even to a higher figure than they have yet attained, but a sufficiency of grain will be forthcoming, though, in proportion as prices rise more and more, people would have to be supported by the State. A forecast of the state of the crops and the general prospects is now submitted to Government by every collector in the month of December, and it would then not be very difficult to estimate the actual balance of grain in the country and the probable yield of the next harvest. The power of the trade to bring grain into the district can only be estimated by the carrying power of the railway, which can be accurately estimated by that department; but even that power might, in case of emergency, be largely increased by doubling the line, a work of no great difficulty, and by the employment of bullock carriage. During the last famine, the largest proportion of the population on the works and in receipt of State aid amounted to nine* per cent., and I do not think that, under any combination of circumstances likely to occur, this proportion is likely to be largely increased. I am unable to divide the applicants into the three classes mentioned, viz.: field labourers, urban poor, and infirm dependents, or mendicants, having no returns to guide me.

Mr. Moore.—I cannot answer this question satisfactorily. If there was a partial failure of the crops, I should learn from my *Mamlatdars* what the condition of the people is, and I should act accordingly. If only half the average food crop is lost I think the people would manage very well with the assistance of a good sized work or two for unskilled labour, to which the poorer classes could resort for maintenance. It would be merely a case of high prices. Because there is generally a considerable quantity of food grain in stock and with half crop there would be no lack of food, and the wages on the large works would enable the poorer classes to buy food. I think there would about one-fortieth part of the population would probably require to be assisted, say about 25,000.

If one-third of the crop failed I think there would be little or no need for assistance.

If one-half failed, about 25,000 might need relief.

If two-thirds failed, the numbers might rise to 40,000; and if this happened in two consecutive years the numbers would not be very largely increased, because the same classes would suffer, and we should have to continue our support. I do not believe that the comparatively well-to-do classes would come on our hands in the second year.

Colonel Anderson.—No estimate of the food crop would be of very material use unless it could be ensured that a known proportion of that crop would come into the market. It is more or less in all grain-producing tracts in the south of Bombay the practice to store grain in pits for many years. It is said that this practice has much decreased of recent years in the vicinity of railways, where the ready means of export have induced quick sales of produce, but it most undoubtedly survives in full force in the inland tracts. In the Kaladgi Collectorate and in Dharwar great quantities of grain were stored over the famine of last year, and only appeared freely in the market as distinguished from Jabalpur grain, as the imported grain was called when rain had fully fallen. An impending scarcity of famine will always induce the hoarding of grain and aggravate the rise of prices.

Previous experience of a famine could alone be a clue to the numbers who might require to be fed in a future famine, and that experience might require to be tempered by a knowledge of the degree of strictness with which the relief of a former famine was worked.

Mr. Robertson.—The forecasts made by the district officers were based on their knowledge of the condition of the people, the crops, &c.; but I do not know exactly the manner in which they were drawn up. Nothing was known as to food stocks; but from about December 1876 the people who buy grain in the markets lived on imported grain, as there was no local grain to be bought. No doubt some lived on their own stocks, but they kept this carefully concealed; yet, after the end of the famine, local stocks began to come out.

Mr. Robertson.—Except in the case of a famine all over India, which is next to an impossibility, such a forecast as is proposed would in this presidency be of no practical utility.

What is more, it could not be prepared with any approach to accuracy. I assert it is quite impossible to calculate the food stocks. Thanks to trade and communications, if half the food crop was lost other places would supply the deficiency. I hold that, except in a universal famine, it is not in this presidency a question of quantity of food, but the question of price, and the absence of purchasing means by the poor. In fact there can be no famine of food.

We have in each village our village forms. One of these, the yearly census as it may be called, is corrected each year. From these we can very fairly gather the number of the poorer classes who will require aid. The estimates sent in by the local officers in this presidency in December 1876, and which were transmitted to the Government of India, were remarkably near to the truth as tested by after experience.

If a famine lasted two consecutive seasons there is no officer who could estimate, with any approach to accuracy, the numbers who would require to be brought on works and on relief. That would entirely depend on the private resources of each person.

Mr. Spry.—The point I would most strongly urge, if called on to make recommendations based on my famine experience, is the importance of making a railway. The district of Kaladgi has a very good soil and a very thrifty class of cultivators, not much in debt to *Saucars*, and they find it so impossible to get their produce away that they bury it extensively in pits; especially so in the south. But Indi taluka is only 19 miles from the railway at its nearest point, and Sindagi 40 miles, and there very little grain is stored, because of the means of export. The inaccessible portion of the district is the part that lies south of the Krishna. There are few grain dealers in that portion—the grain lies in the hands of *ryots* in pits. The custom is that every market day they send in their grain in carts to be sold through *dalals* (brokers); there are three or four such markets in each *taluka*, and in this way those who have to purchase grain—all the urban population, and all rural non-producers who have no stocks—lay in their week's stocks. When the panic of famine began the

* On works - - -	54,000
Direct relief - -	30,000
	84,000
Population according to the Census of 1872 - -	907,235

Ch. II. Qn. 5.

Bombay.

ryots closed their pits. This panic set in in October 1876, when the failure of rain was assured; partly, too, they combine to strike for higher prices (see my remarks printed on page 245 of the Bombay Compilation of replies). Their action was more due to combination than to panic—many said they would not sell till prices rose to 4 seers per rupee. When I persuaded people to bring in some sacks of grain to sell, I placed a police guard over it to protect it, without which it would have been looted. When the import of Government grain showed the people how easy it was to import, the cotton dealers and merchants whose ordinary business was only export and mainly export of cotton, and who had no stocks of grain, took to import, wrote to correspondents at Sholapur, and brought grain in on carts and camels, and this kept prices down. Thus the Government import created a trade where none existed before, and if it had not been for this there would have been great mortality and general anarchy and robbery. The grain import by Government was very expensive, for 240,000 lbs. cost 22,000 rupees, and I consider that this may be taken as a proof that Government can only enter into such business at a greater cost than traders can work at, since there is no doubt that traders could have thrown in the grain at a less cost. If there had been any existing trade, and especially if there had been a railway into Kaladgi, I think Government should not have imported. Afterwards there was no need for further interference, when once trade was set going. But the carriage gradually grew very dear; from Sholapur to Bijapur, 61 miles, in July 1877, the hire of a cart was Rs. 35, and the general rate was from Rs. 20 to Rs. 30. The cart carried rather less than usual, 10 maunds, because the bullocks were weak. At this time a system of carriage by head-loads sprang up. Men went from their villages with a few rupees, bought grain and returned to sell it in their villages or the market. They were not hired labourers carrying for big traders, but men who speculated in a small way with their own little capital. This mostly applies to the parts north of Bijapur, but also reached a little further south. About 3,000 or 4,000 people a day crossed the Bhima ferries and the north-eastern frontier from the Nizam's territories every day on this business. This stopped when the rains in September made the road impassable; but then people became more hopeful and opened their pits. I think on the whole the northern taluks fared best in the famine; other conditions having been equal they had little stocks but easy communications, while the southern taluks had large stocks but little means of communication. But speaking generally the southern taluks are the best off. All through the famine the import trade carried on was entirely put in motion by local dealers sending for grain to other places like Sholapur, Bellary, Belgaum, Hubli, &c.; no big trader from those places sent in any except upon an order from some local man in the Kaladgi District.

Madras.

MADRAS.

Mr. Whiteside.—A district officer has available many returns and statistical reports from which he can form with great accuracy a forecast as to the state of the coming season in his own district, while the reports printed and circulated by Government in regard to the condition of adjacent districts place him in a position to calculate how far the state of the surrounding country is likely to affect his own district as regards prices, demands for grain for exportation, &c. But the calculation of the quantity of the stocks of grain actually in hand, and the length of time for which they will last for the support of the local community, is a far more difficult matter. All natives, and especially the agricultural class, are addicted to the hoarding of grain year by year. A prodigious share of the crops as they come off the ground are stored away in under-ground receptacles, the existence of which is jealously concealed and strenuously denied if inquired after. These stores of grain are kept intact, often for years at a time, and are gradually fallen back on when scarcity prevails, or when bazaar prices rise inconveniently. It is impossible to estimate even with approximate accuracy the total amount of these grain-stores, but of their existence in large numbers we have clear and unmistakable evidence afforded in the course of the famine, which has now prevailed in this district for upwards of two years. According to the last Census the population of North Arcot was 2,015,000 persons, and during the famine it was calculated that 1,500 tons of grain per diem would be required to feed those people. But when the famine was at its highest pitch of severity, the largest quantity of grain imported by rail in any one week never exceeded 1,000 tons. It was thus clear that the vast bulk of the population was being regularly supported by grain actually present in the district. The grain dealers' supplies in the large towns consisted chiefly of grain imported by rail, but the great mass of the agrarian population throughout the past two years have been eating their own grain. This is further shown by the fact that when the late raggy harvest was known to be a fine one, and heavy crops were being reaped, large quantities of old raggy were suddenly thrown into the market in various places by people who must have kept them in store throughout the last two years in spite of the enormous prices that could have been realised had they chosen to sell earlier. This district is so well supplied by railways, and there is such an excellent system of road communication from the various railway stations, that no difficulty was experienced throughout the famine in getting stocks of imported grain from the railway stations to the chief market towns. There was, therefore, never a famine of food in the true sense of the word. The secret grain-stocks coupled with the weekly importations by rail amply supplied for the needs of the people. But it was impossible to calculate even with approximate accuracy the amount of grain stored away in the villages, for such accumulation had been made gradually and secretly for years, and though the divisional officers were certain that they existed, the owners would not for a moment admit the fact, partly from a fear lest they should be marked down for a grain dacoity at an early date, and partly lest the Government officials should refuse them State aid as the famine went on.

The real difficulty was lack of money to purchase food at existing high rates.

Mr. Longley.—I admit that, if an accurate forecast could be made, it would be of great utility, but I am of opinion that this is not possible for the following reasons:—

(1.) If the distress is widespread embracing, as in the present famine, ten or eleven districts, or in foreign countries, Burmah for instance, which draws away food stocks from this country, the condition of the people can by no means be presaged, considering the facilities now afforded for exportation, *i.e.*, seaboards, roads, and railways. As an instance, I may say that the stress of the present famine would have been felt later on in Salem if there had been no exports to Mysore in the earlier stages of distress.

(2.) Another element which lowers the value of the forecast is that the mere fact that the estimated stock in the country can feed so many thousands of people for so many days is no index to the quantity required *to be supplemented*, for, when distress commences and prospects appear doubtful, a great number of those agriculturists and proprietors of land with whom the stocks remain withhold contributing to the general market either in hopes of getting still higher

prices or in view to guard themselves against the contingency of a greater scarcity, while merchants export all the grain they can secure to places where higher prices rule.

(3.) It must not be forgotten that with distress people possessed of a limited supply of food begin to reduce their own rations. This reduction is in proportion to each person's means or other circumstances, so that a forecast based on the assumption, say, that a male or female of a given age would consume so much in ordinary times would fail to be of much practical value.

(4.) But, supposing that the above elements are absent, there is still a difficulty in making an estimate; for, though the productive power of the country can be estimated, there are no reliable data on which to calculate the existing stocks in the country, as we have no information at present of the actual quantity of normal exportations and importations.

(5.) Assuming the distress to be local, the data for a forecast are (1) the census returns which give particulars as to age, number, sex, &c., of the total population as divided into several castes and classes, and (2) the cultivation returns of the district. Ascertaining the average quantity of food consumed by people of different ages, sexes, and classes, an approximate estimate of the total quantity of food required is arrived at by the help of the census returns. The cultivation returns give us the area cultivated with different crops in Government villages. The average yield per acre of each crop being determined, the total average production of the district may be assumed. It should be noted here that there are no accounts either with Government officers or with Zemindars to show the *cultivation* in the villages belonging to the latter. In fact, Zemindars do not require such accounts, as they collect assessment on the whole holding irrespective of the circumstances under which lands are left waste. This also contributes to lessen the value of the forecast, though for the purpose of this calculation the proportion of cultivation to waste in zemindaris may be assumed to be in the same ratio as in Government villages. The following is an estimate, based on the normal consumption of the population, of the food available for the Salem District (*vide* accompanying statement):—

		Acres cultivated.	Average Yield per Acre. Madras Measure.	Total Yield. Madras Measure.
Yield in years preceding the failure.	Dry food grains.	1,422,393	350	4,97,837,550
	Wet crops	114,427	400	45,770,800
	Total -	1,536,820	-	54,36,08,350
Consumption in the year according to the accompanying statement - -				3,67,541,130
Balance to the credit of the year in which the failure occurs - -				1,76,067,220
Production in a year of half yield -				2,76,804,175
Add the surplus of previous year on the assumption, say, that all above a year's surplus is disposed of - -				1,76,067,220
Total -				4,52,871,395
Average quantity required for a day throughout the district - - -				10,06,962
Number of days for which the above quantity would suffice - - -				450

N.B.—Population 1,966,995.

The total yield of the district in the year in which the failure occurred together with the surplus of previous years in stock is sufficient to sustain the people throughout the year; but, as the stock is not distributed equally among all classes and peoples, importations would be required to feed that portion who, if the market is not supplied by stock-keepers, are unable to purchase food grain.

The census returns furnish information as to classes who would be able to purchase in times of distress, "occupation" being taken as a standard for determining the same.

Persons of the following occupations may be classed as "able to purchase":—

Government Service.
Military.
Learned Professions.
Traders.
Conveyers.
Domestic Personal Service.
Cultivators of large holdings.
Industries—
- Food.
- Metals.
- Construction.
- Books.

Indefinite and Non-productive—
- Property.
- Unproductive.
- Others.

N.B.—These classes include holders of stocks as well as those who depend upon the market.

The following classes may be taken as those unable to purchase when high prices prevail:—

Professions—
- Minor Professions.

Agricultural—
- Small Cultivators.

Industrial—
- Dresses.
- Household goods.
- Combustibles.
- Laborers.

These are the classes who require to be relieved by the State. As the number of the adult male population of the several classes is given in the census returns, an estimate can be formed of the numbers of their women and children on the basis of the district ratio. But it must be remembered that all the classes above mentioned will not come in for State aid at once, for, as above stated, they first reduce their rations, and for a considerable period stick to their homes and villages. The numbers, therefore, that will have to be relieved will increase as the distress becomes intense, so that no estimate of them can be formed.

The classes to be relieved are stated above. A great number of mendicants in Southern India do not go to camps or works.

I do not expect any numbers when the failure is one-third or half in the first year, but when it fails three-fourths, then the ryots of small holdings begin to dispose of their live stock, &c. In the absence of necessary materials, and considering the difficulties above indicated, I cannot form an approximate estimate of the numbers that will have to be relieved by the State at the different degrees of failure mentioned in the question, but merely enter the numbers (according to the Census of 1871) which will have to be relieved in the height of a famine in the succeeding years:—

	Men.	Women.	Children.
Minor Professions -	7,722	7,799	9,778
Dresses - - -	40,056	40,456	50,722
Household goods - -	4,904	14,953	6,209
Combustibles - -	424	428	536
Laborers - -	118,206	119,388	149,684
Sixty per cent. of cultivators -	201,792	203,814	255,534
	373,104	376,838	472,663
Total -	12,22,605		

Mr. J. G. Horsfall.—The population is now pretty accurately known from our census returns. We get returns also showing the extent of land sown with food grains and approximately the quantity of the produce, so that there would be no great difficulty in calculating what proportion of the population could be fed upon the produce of any single year; but other ingredients step in to make the calculation anything but a simple or certain one. The result of previous harvests, the stock of grain in hand, are most important; the resources of the district and its production of other than food produce are important disturbing elements. Then again statistics as to the food-grains and other produce in zemindaris are not forthcoming. This needs correction, if necessary, by legislative enactment. The condition of other districts and other markets has also to be taken into consideration, regulating, as they do, the probability of exports and imports, for the merchant will not be deterred from exporting food grains from a district already in famine if other markets are more favourable. Still the primary considerations are the population to be fed and the amount of food grain produced, and with these as his data, with due allowance for other disturbing elements, a pretty accurate estimate may be formed as to the proportion of population likely to be dependent upon relief during the next few months of any year. The estimated yield in food grains of a fair year in this district excluding zemindari lands is 450,000, the population of the same being about 1,150,000, the quantity required for consumption being estimated at 300,000 candies,* thus giving a very large surplus to store and export. The produce and population of zemindari tracts may be assumed to bear the same proportion, thus giving estimated produce of food grains at 560,000 candies, population 1,450,000 with a consumption of 380,000 candies, leaving a surplus of 180,000. Thus half an average crop would leave 100,000 candies to be provided from stored grain or imports; that is, over 300,000 would be without food. These must be fed by imported grain and by grain already stored. A failure of one-third crop only would merely reduce the amount otherwise available for exportation, but would not necessitate any relief measures at the hands of the State.

It is questionable whether the failure of one-half the crop would even necessitate State interference. The crops in this district for the year 1877–78 were estimated at little more than half an average crop, and yet no relief has been administered since the commencement of the year. Prices have pressed very hardly upon all three classes, but actual State assistance has not been found absolutely necessary.

The loss of three-quarters of the crop would leave sufficient produce to meet the wants of one-third of the population only. Two-thirds of the population would be dependent in such case upon stored grain and importation. I should expect 5 per cent. of the population to come upon relief in such a case.

For the reasons stated above the loss of one-third crop in two consecutive years would not entail any State relief.

For a second year with only half a crop the proportion to be relieved would not exceed two per centum of population. As a matter of fact, after two years with only half the average yield, we have now in this district no relief measures or State aid whatever. In the case of three-quarter failure of crops in two successive years twenty per centum would probably require Government relief.

Mr. Price.—I should start by assuming that the population of the district consumed, on an average, 1½lb. of grain per diem, which, from frequent observation long before the famine, I believe to be a fairly correct estimate. I would then take the area of crop actually reaped in the preceding year and the area cultivated in the year up to date of the forecast, compare this with the cultivation at the corresponding period of the previous year, and so make some approximate estimate of the cultivation for the whole of the year under consideration. I should then calculate, by taking the reported outturn of the previous season, and making such deductions for the difference so far observable in the two seasons, as appeared to me to be right, what the probable out-turn would be, and, by putting this into pounds, would be able to estimate for how long the people of the district could be supported by the crop of the year for which the forecast was made, and how much grain in the way of stock might be taken to be in hand. In a district such as this it is with rare exceptions that any stock of more than a year's standing is kept on hand. In Cuddapah and Bellary, where much grain is buried, it is absolutely impossible for any reliable estimate of what stock of grain is really stored to be made. The sequel of the famine showed clearly enough that, in places where the most experienced native officials stated the opinion that there was no grain whatever, large quantities were hoarded. I see no other way than that suggested of framing a forecast; at the best no officer, even one intimately acquainted with his district, can make anything but a very rough calculation. If he allows, on the unfavorable side, a liberal margin for error, he will place himself, though he may not be very accurate, on the safe side.

Take that the average annual crop of food-grains of all kinds in this district is 279,812 tons (which is something about the mark). Half of this would be 139,906 tons. The population as per census of 1871 was 940,747. Allow a daily average consumption of 1½lb. per head. This would give 222 as the number of days for which the population of the district could be supplied. The difference would have to be made up by importation. The estimate of the number of persons who would probably be able to purchase food would entirely depend upon whether the failure of crop was for the first or second time; a failure of one-third would for the first year cause no appreciable indication of pressure, excepting perhaps that prices might rise a little; a failure of half would cause a demand for employment towards the close of the season, which ought to be met easily enough by the ordinary work of the district; and a failure of three-fourths would probably create a necessity for small special works, but not relief at home. As to what the percentage of the population which would thus come upon relief would be I can form no estimate. I would not have touched on the subject at all had I not seen in 1866 the case of a failure of three-fourths crop in the Salem District. There was then certainly no visible distress in villages, but the people clamoured much for work. Some comparatively small sums were spent upon new roads, but what the proportion of people who came upon the works was I have no means of stating. I recollect that they were in the main agricultural labourers. A failure of one-third for a second year would not, in my opinion, throw any appreciable number of persons unable to buy food on the hands of the State; a failure of half would call for assistance on the part of the State to 10 per cent., and of three-fourths crop of something like 20 to 25 per cent. The figures of relief operations should, in my opinion, most decidedly not be taken as the basis of any calculation as to how many persons out of the population of any particular district may, under certain known conditions, be expected to come upon the hands of the State in the event of the failure of crops. I make this remark in reference to my personal experiences in the districts of Bellary, Cuddapah, and Chingleput. My reason for it is that I am aware that very many individuals were admitted to relief of all kinds who ought not to have been.

Mr. Martin.—In this division I should say that a failure of one-third of the average crop even for two years would not produce a necessity for relief. If half the average failed, I should expect that relief would

* *N.B.*—This cannot be right if the candies were intended to denote the usual measure of weight. Tons would be near the mark.

not be required if the failure was equally spread, and if the rain-fall was sufficient to produce wild vegetables and to prevent the fish and other animals which live in the water from dying, but if this failure of half was not equally distributed, there would probably be distress in the part where the average production falls below half, and the distress would vary with the extent of failure; thus, in a tract inhabited by 100,000 people I should expect to have seven thousand on relief if the failure extended to three-fourths. If this distress was repeated for a second year, I should expect to have fifteen thousand of the people of this tract on my hands, and moreover people from both the tracts in which the failure was both half and less because of the high prices. The numbers would in all probability be 5 per cent. of the whole population of these last tracts.

If the failure was three-fourths the average, this would probably mean that there was no production at all in part of the tract, and that only a small part would have as much as half. I should expect to have 10 per cent. of the whole population on my hands before the first year was over, and if the distress was continued for a second year, I should not be surprised if the numbers went as high as 30 per cent. It is exceedingly unlikely in this division that a failure amounting to even half of the crop will be protracted, for any heavy rain, even though it may be sufficiently heavy to seriously damage the general harvest, must supply the wells, and the moment the wells are supplied, labor is available and a crop is put down. In a very bad season the crop raised comes to market in sixty days, and as the wells are capable of yielding a total weight of 33,000 tons, the relief from them will be very rapid and will speedily alter the ratio of the production to the average.

MYSORE.

Mr. Ricketts.—If the food crops failed to a very notable extent for two consecutive years, it is clear that owing to deaths from starvation and disease, &c., the number on hand in the second year would be considerably less than in the first year.

Taken by itself the loss of half the average food crop of the district might not prove very disastrous, if the previous seasons had been good and the people were flourishing. I will assume that the existing food stocks and the power of trade to bring in more are elements sufficient to supply the quantity of food grain actually required for consumption, and all that is wanted is money to purchase food; but how much money would be so wanted and how many persons would have to be relieved by wages or by food would depend not only on the current famine prices of food, but the proportion they bore to current rates before the famine. Forecasts are further delusive in that during the actual period of famine the additions to the number requiring relief are of daily occurrence, as fresh villages, and even groups of villages, suddenly and sometimes without previous warning fall into the ranks of the famine stricken. As a famine progresses, and knowing what is being done and what is proposed to be done, it is possible to make some forecast, but in my opinion not before.

QUESTION 6.—MEASURES FOR MEETING TEMPORARY DISTRESS.

What measures should the district officer adopt for relief, supposing that he believes the distress to be temporary, or is not satisfied that it is indicative of approaching famine? Should applicants be first employed as far as practicable on the ordinary works in progress, whether under provincial or local officers or under agents of the Public Works Department or municipalities? Under what tests should applicants be admitted? Under what circumstances may it be desirable to open special works? How should such special works be arranged? Whether so as to collect the applicants in comparatively large numbers at a few localities, or to give them employment in smaller bodies at many places in the distressed region and in the vicinity of their homes? May such works be best placed under the Public Works Department or under Civil supervision? State the arguments in favour of and against either course? How may the Public Works officers be best placed in communication with the district officers for these purposes? How should the Public Works officers be guided in their selection of works for relief? And on whom should the responsibility rest in the district for seeing that all needful steps are taken by all branches of the public service concerned?

Punjab.—6 answers are given. They are in accord with the views of the Bombay and North-Western Provinces officers.

North-Western Provinces.—35 officers have answered. The purport of the answers is similar to that of the Bombay replies. All applicants should be admitted.

Bengal.—17 answers are given. They agree that first ordinary and then special works should be opened, but some officers advocate more numerous works near the people's homes as the distress deepens.

Bombay.—15 officers have answered the question. Their views are—

That distressed persons should be employed in the first instance on the ordinary works of the season. That the year's budget grants should be re-appropriated from works requiring skilled to works requiring unskilled labour. That special works should be opened as need increases. That they should be large and few, and not near the people's homes. That they should be under the Public Works Department, the officers of which understand the management of works. That the general responsibility for the care of the distressed people should rest on the collector.

Madras.—39 European and 5 Native gentlemen have replied to this question.

In the early stage of temporary distress it is generally considered that a vigorous prosecution of the ordinary works in a district—provincial, local, and municipal—will be sufficient to meet the enhanced requirements for employment, and at this period a fair day's work for the usual wage is thought to be the only requisite test.

The majority of the officers consulted seem to think this would suffice at a more advanced stage of operations, as a general rule, which might, however, require modification with reference to works in the vicinity of large towns.

Special works should be put in hand immediately the ordinary works in progress fail to meet the demand for employment, and to meet this emergency promptly the plans, estimates, &c. for such works should be prepared beforehand. These works should be disposed so as to economise supervision, to be within moderately easy access of those needing employment, and to avoid the collection of unwieldly bodies of labourers in one locality. If long distances have to be traversed to reach relief works, people really needing employment

Ch. II Qs. 6.

will hesitate to go because of the difficulties of returning to their ordinary avocations should a favourable change of season occur. There is some variety of opinion as to the agency under which these special works should be prosecuted; but it is almost unanimous that, so far as professional supervision is concerned, they should be entirely under the Department of Public Works. As regards classification of labourers, issue of pay, sanitary and medical arrangements, and the general welfare of the labourers, it is thought that civil agency might advantageously be employed.

The Collector should be held responsible for the proper conduct of famine relief operations, and to this end all departments must work in subordination to him. The relation of the district or superintending engineer to the Collector would be that of professional adviser, and in the selection of works they should act in concert.

Punjab.

PUNJAB.

Muhammad Hayat Khan.—If the distress be temporary, it would only be necessary to provide the people with employment in the public works that may be going on at the time in the district, be they under civil or Public Works officers; but if the distress assumes a severer aspect, special works would have to be opened. All important works that require engineering skill should as a rule be entrusted to the officers of the Public Works Department; but in respect to forming gangs and making payments to them, the work should devolve upon civil officers. It would be difficult to give the people work in the vicinity of their home, as the advantages thereby secured to them will be comparatively much less than the loss which Government will suffer by the arrangement. Moreover, it will tempt the people who can afford to support themselves somehow or other to try to get themselves admitted into the relief works. Relief works should as a rule always be opened in places where works of public utility are needed, and which will be of permanent benefit to the people in general, but they need not necessarily be very far from the home of those who will be employed in them, and should, if possible, be within the tahsil in which they live.

Lieutenant-Colonel Parsons.—(*a.*) Ordinary works in progress, if within the capacity of all comers, are well adapted for relief purposes, otherwise special useful works should be started, more especially earthwork.

(*b.*) Works should be opened to all comers, as, if tests of apparent distress be applied, it is difficult to know that an applicant may not be on the verge of distress.

(*c.*) The locality of the works would depend in a measure on their necessity as relief works. (*d.*) If famine be extensive, it is difficult to arrange a sufficiency of small works, but an extreme of the distance test is not advocated. (*e.*) For the larger works, the supervision of Public Works officers is best on account of their professional qualifications and time at their disposal, but when works are not of an extensive nature, civil supervision is sufficient, and best suited to the peculiar requirements at such times. (*f.*) Public Works officers would be placed in communication with the district officers at such time as they received departmental orders authorising the required measures, and would consult district officers in their selection of works for relief. (*g.*) As the refusal to admit labourers in any case is not recommended, the responsibility for keeping the works in progress would rest with the supervising officer. It is not quite understood to what reference is made in the words "needful steps" at the close of question 6.

Mr. Roberts.—If liberal and timely suspensions of the land tax were made or promised, I do not think any special relief measures would be called for among the village population in any case of merely temporary distress, but that the proprietors, in comparatively easy circumstances, would, when relieved from this burden, readily undertake to provide for the poor of their own villages. In towns gratuitous relief should after a while be provided for the blind, lame, and helpless, and work for artizans thrown out of employment. At the very outset, and before hunger had had its effect in reducing the strength, I do not see any reason why applicants for relief should not be employed on works already in progress, whether under engineer or civil officers, in the same way as ordinary coolies, without any distinction. In that case no test would be needed. When, owing to the progress of famine, it becomes necessary to pay subsistence allowance to persons who cannot do a full day's work, special works must be started; and to avoid the demoralization of voluntary labourers, the two classes should not be employed on the same works. Classified gangs should be formed, and as a test of necessity, a minimum subsistence allowance given for tasks graduated according to the strength of labourers of different classes. Large works are preferable to small ones, because less difficult to supervise, and the agency of Public Works engineers better than that of civil officers, because they can devote more time and care to the management. The district officer must be responsible for seeking out the needy and sending them to the works, and for securing efficient aid from his subordinate establishment, and he should be in direct communication with the engineers in charge of the works. When large works affecting the interests of several districts are projected, the local government should select the schemes to be carried out; but, in the case of district roads and local irrigation works, the district officer and commissioner will be the best judges of their expediency.

Mr. Nicholl.—Applicants should, as far as possible, be first employed on ordinary works under local officers; no special tests should be applied.

Officers in charge of works can always satisfy themselves by inquiry and from appearances, whether applicants are really in want, and whether they should be employed or not.

Special works should only be opened when ordinary works do not give sufficient employment to all who apply.

If the distress in its first stage is general throughout a province or large tract of country, the employment of small bodies at many places in the distressed region and in the vicinity of their homes, is, in my opinion, the better plan.

The employment of large bodies at three or four localities in each district would only become necessary when the distress began to assume the features of a famine, or at the commencement of the second stage. At this stage the numbers requiring employment would be enormous, and the agency required to superintend them in small scattered groups would require to be in proportion.

Works requiring skilled labour would be best placed under officers of the Public Works Department, but works requiring unskilled labour might with advantage be placed under civil officers. My reason for offering this opinion is because the employment of professional men on large salaries to superintend earthwork, such as making roads, the lines of which have already been laid out, would be a waste of power and money. Men competent to superintend such works can always be obtained by civil officers for small salaries.

A deputy commissioner has always under his orders

in some department or other, men acquainted with his district and the people, whom he could make available to exercise a general superintendence over works placed under him, so that the extra men would only be employed to augment his existing resources, and look to details.

Public Works officers could best be brought into close communication with district officers by being placed directly under them. This would be desirable in every way. The district officer is not only the principal civil officer in the district, but he is supposed to be better acquainted with the wants of the district and people than any other official. He is the man to whom the people would naturally look in time of trouble, and men working under his orders would receive willing obedience from the people.

Mr. Benton.—If it be believed that the distress is only temporary, I think that the district officer should arrange to provide for relief by commencing works of an ordinary character in the distressed tract, suspending other works elsewhere in order to provide the necessary funds, whether from district or municipal sources. These works would be carried on under the ordinary agencies, and not under the Public Works Department. The wages given should, I think, not be subsistence wages, but only slightly under the ordinary rate, so as to test the demand for work.

There would be no loss in this, as the ordinary tasks would be demanded, and inefficient persons would not be admitted on the works, which would be carried on with much greater ease. Full wages being paid, or nearly so, the able-bodied would be able to support their inefficient relations as in ordinary times. This system would be pursued until labour could be procured at rates considerably below the ordinary rates. This would be a sure sign that the distress was intensifying, and that a change should be made from payment for labour at full rates, to the exclusion of inefficient persons, to subsistence wages with admission of all persons who could perform any labour. If there were very serious distress, the district or municipal funds would not long bear the strain, and it would be necessary to apply to Government for assistance, and this would probably be the most suitable time to open special works. Government might be willing to expend money on works of an imperial character, while it would not be willing to spend Imperial or provincial funds on ordinary local works. These special works would of course, as far as possible, be works of a useful or even remunerative character, and this condition would probably leave little choice as to whether the applicants for relief should be collected in large bodies at a few places, or at many places in the vicinity of their homes. In any case the works would be near the homes of a number of the applicants for relief, which is no doubt an advantage, provided care be taken that the relief works are not abused; and I would not be deterred by any fear of breaking up homes from calling on the others to move for a time to works at some distance.

I think that generally these works ought to be under the Public Works Department, as they would probably be works of importance demanding engineering skill; but in any case, as they would by the supposition be attended by crowds of people who were too numerous to be relieved on petty district works, keeping order among them, exacting sufficient tasks, and executing the work in a proper manner, would no doubt be very difficult tasks for even professional officers with well trained subordinates. The want of trained subordinates for this purpose was severely felt on the works undertaken in Karnál last year, as the work was badly done, and the exertions of the labourers were not by any means turned to the best account.

I should think that tests for admission to works, whether ordinary or special, conducted on the system described above, were scarcely necessary. On the former works the applicants for relief would be required to give a fair day's work for something less than an ordinary day's wages, and in the latter they would be required to perform a reasonable task according to ability for a subsistence allowance.

I think the Public Works officers should carry on these works, just as other works, under the direction of their departmental superiors; it being well understood, however, that the immediate object in executing the works was to provide relief for the distress. It would, however, be competent to the district officer to give any order in writing concerning the admission or treatment of distressed persons to the Public Works officers; and the Public Works officers should be bound to carry out the same whether they approved or not, pending a reference to departmental superiors, who would immediately be furnished with copies of the same, together with the objections of the Public Works officers if there were any. If departmental superiors could not agree, a reference to Government would be necessary. This procedure would be similar to that provided for the interference of the magistrate of the district in jail management.

With this provision the district officer might properly be held responsible for the entire management of relief operations, so far as they affected the treatment of the distress as apart from the execution of the works, which would be carried out in accordance with plans and estimates sanctioned by the proper authority. In this way the officers of the Civil and the Public Works Departments might be restricted to matters within their respective provinces; but it is unnecessary to add that, without an earnest desire on the part of both to work in concord as far as possible, continual jarring and cross purposes might be anticipated.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Sells.—All relief works should, in my opinion, be such as can be executed by utterly unskilled and unintelligent labourers. This is the most important point for consideration in determining the comparative suitability of projects. In municipal towns the committees will, as a rule, be able to afford employment to a considerable number; sanctioned works giving place, if necessary, to other extemporized work, if the latter are of a more suitable nature. In other places, the Public Works Department should co-operate with the district officer, and works determined upon by the latter should be carried out under the supervision of the former. If the sanctioned projects of the Public Works Department are of a suitable nature, no special works need be started, possibly; but if they are not suitable, that is, if they require more or less skilled labour, special work should certainly be started. For ease of supervision such works should be few in number, and should be fairly distributed in the most distressed parts of the districts. Large numbers at three or four places that would be, I should say, readily managed, than small knots of labourers scattered about at distances of every five or ten miles. Supply of food also can be better regulated.

Captain Home.—District officer should consult with executive engineers as to what works, for which provision has been made in the budget, can be started, or, if already started, pushed on with more vigour. He should at the same time report to the commissioner, who would put himself in communication with superintending engineers.

Ordinary works in progress should be utilized as far as possible.

Subsistence allowance and task-work should be the tests.

Special works would only be opened in case of there being no ordinary works available, or if distress increased.

Special works should be arranged so as to collect the applicants in comparatively large numbers at a few localities; this is necessary in order to ensure proper supervision and economy.

Special works should be under the supervision of the Public Works Department, because its officers are in the habit of dealing with large gangs of labourers and of portioning out task-work. Want of experience in such matters is sure to lead to waste of money and laxity of discipline. At the same time the works should be visited from time to time by the district officers in company with the executive engineer, and all requirements and alterations discussed and settled on the spot as far as possible.

Works for relief should be selected on the following principles:—

1st. They should be works which can for the most part be executed by unskilled labour.

2nd. They should be works of utility, and, if possible, of necessity; that is to say, works which must be carried out some day, but which have been postponed for want of funds or other causes.

3rd. At the first outbreak of distress, works of moderate size, or works which can be divided into self contained sections, should be selected, so that in case of the distress passing off, Government may not be committed to a large expenditure to complete them.

The collector should be responsible for seeing that all needful steps are taken.

Mr. Cordner.—(*b.*) I think applicants for work should, as far as possible, be employed at first on ordinary works in progress in a district, so long as such employment of them does not interfere with existing contracts, as it would not be fair to contractors to insist on their employing such labour after taking up a contract.

(*d.*) Special works should be opened as soon as it is apparent that overcrowding is likely to take place on ordinary works in progress. Such special works should be arranged for in consultation between the Civil and Public Works Department officers.

(*e.*) Supposing the relief to be of a temporary nature, I think small works near their homes the best, and the reverse if the distress is likely to be lasting.

(*f.*) Petty works such as do not require any engineering skill are better under the civil officers.

(*h.*) Public works officers will be best guided in selecting relief works by consultation with civil officers as to what will be a permanent improvement to the district or province.

Major Jeffreys.—(*a.*) He should induce the Public Works authorities to push on or extend all ordinary works sanctioned or in progress.

(*c.*) Under the labour test strictly applied, *i.e.*, working through contractors at the ordinary contract rates.

(*d.*) Special works other than sanctioned and ordinary should not be opened until a considerable amount of distress is apparent.

(*g.*) Under the Public Works Department certainly.

(*h.*) The advantage of placing them under Public Works officers is that you get the necessary technical knowledge to prevent any serious mistake of construction, such as inaccuracies in digging levels, &c. The measurements are more likely to be accurately made. The Public Works Department has a large staff of European subordinates, who, properly supervised by competent assistants, are more likely than any civil agency to prevent the development of those abuses which are certain to follow the working of an establishment composed entirely of natives, such as a department presided over by single civil officer would be.

The advantage of a civil officer would be that he would better understand the native character, would find it easier to prevent desertions, by apportioning the severity of the task to the character and class of people with which he has to deal; but on the other hand it is likely he would be more profuse in the expenditure of Government money.

(*k.*) Those which would be most useful to the country.

(*l.*) On the Collector.

Mr. Colvin.—Open ordinary works experimentally. Yes; under Department Public Works and also in municipal works.

I would admit all who come, but they would be paid by the work done at ordinary rates. If experience shows that the works were largely attended by classes who ordinarily do not come to them, and who from inexperience could not work at Department Public Works rates, special works should be opened.

Mr. Sandys.—The ordinary works in progress in this district would not, I think, afford sufficient relief even if the distress were to be temporary. If there were any distress it were necessary to relieve, it would last with more or less severity for six months at least, and special works with light task-work to commence with should be started without delay, and before the classes requiring employment are reduced in condition. The distance and wage test should be rigorously applied.

Supposing the special works to be taken in hand in good time, the able-bodied applicants should be collected in large numbers at a few localities and be engaged on works placed under the Public Works Department. The money thus spent in supporting those requiring relief would be expended on works of real public utility, and with the limited Public Works Department establishment and difficulty of largely increasing it on a sudden emergency, the supervision would be more effective.

Applicants who would be placed in the efficient gangs should alone be given employment in the district to which they belong, if there were no large works in hand there; and it would, I think, be better to employ these inefficient gangs in large numbers at a few localities, so as to admit of the completion of the most important of the district works and of a more efficient superintendence. Experience shows that employment will have to be given for at least six months, and if the small works in the vicinity of the homes of the applicants are started under civil supervision, a large number of persons are attracted who do not require relief at all events at the earliest stage of the scarcity; the small works are comparatively of small public utility, and civil supervision, owing to paucity of officers and want of professional knowledge, is sure to be weak. Public Works officers can best be placed in communication with district officers by being appointed, as they are in these provinces, to the staff of the district officer, and by being required to be guided by the advice of the district officer in the selection of works for relief and number required to be taken in hand.

The district officer must be held responsible for seeing that all needful steps are taken by all branches of the public service.

Mr. Tracy.—Relief works should be commenced tentatively. Employment should first be offered on ordinary district or municipal works. All applicants should be admitted who are willing to work for subsistence wages. If the applicants for labour on these terms become too numerous, special works be opened. I am in favour of giving employment at many places and in the vicinity of the homes of the distressed. Small bodies of labourers are more manageable and less likely to suffer from epidemics, and if near their homes, their labour would be available to their usual employers in the event of a favourable change of season. At the outset it would be better to employ the distressed on such works as the repair and maintenance of the district communications, under civil

supervision. Should these prove inadequate, larger works, such as canals and railways, should be provided under the Public Works Department. These works would be selected by Government. The Public Works officers should be required to employ labourers in accordance with the rules prescribed by Government for relief works, and should submit their returns through the collector. The district officer should be responsible for seeing that all needful steps are taken by all employed in his district.

Mr. Mellor.—If it be likely that there will be at no very distant period general employment in the fields, it is obviously better to give employment on small works which will be quickly completed, and which will not take the people to any great distance from their homes, than to open a large work. At the same time a large number of small works are more difficult to supervise than one big work. I consider that the management of the works should be under the Public Works Department, but that the civil authorities should select them.

Mr. Leeds.—I should advocate works under the Public Works Department, the civil staff being everywhere too limited to deal satisfactorily with such matters otherwise than in the way of general supervision. One or more centrally situated works are, I think, preferable to a number of petty works at many places in the distressed region. The nearer the works are to the people's homes, the larger is sure to be the number of those who resort to them, and the reality of the distress can therefore be best tested by forcing applicants for relief to go a certain distance.

Mr. Lawrence.—After the ordinary repairs have been completed I would advocate the employment of distress labourers on other district requirements. There are always roads which will be the better for raising. But when famine has declared itself, I would mass the labourers. Proper supervision over large numbers, if scattered, is impossible. The only tests I know of are enforced residence and the labour test. But there may be times when the prevalence of disease will necessitate resort to small works. All the works should be in charge of Public Works officers, under the general supervision of district officers. The latter select the works, arrange for supplies, hut and pay the labourers, and are generally answerable for the management, but the less they interfere with the Department Public Works officers the better. The latter, if they are worth their salt, take interest in all branches of the management, not in construction only. He is on the spot with a large staff of assistants, all of whom can do something beyond mere construction.

Mr. Whalley.—If the district officer believes the distress to be temporary, he should at once exert himself to the utmost to obtain suspension of revenue in the tracts most affected, and in the villages where he can depend on the zemindars co-operating with him. The suspension should be generally conditional on the zemindars supporting and employing their own poor. To aid them in doing this takávi should be liberally given for agricultural improvements. At the same time public works should be vigorously pushed on, on the ordinary system, and contracts offered on favourable terms to zemindars who have no other way of employing their poor. I know this has been tried and failed or been very partially successful. I could give reasons for its having failed, but I know of none why it should not succeed if properly managed. Relief works should not be opened until the number of destitute is evidently too large to be relieved and employed by the zemindar.

Small relief works should then be opened under the supervision of civil officers in the most distressed parts. If more is necessary distress has passed beyond the temporary stage. Then it becomes necessary to start large works under Public Works officers. These works are better at a little distance, say 20 or 30 miles, from the scene of distress. They should be fed from the civil officer's works, and the latter in turn should draw from the zemindars works, which having served their purpose, would be gradually depleted and wound up.

The civil officer's works, too, will be gradually turned into a machinery for collecting and forwarding destitute labourers to the public works branch, until the whole of the relief labour is concentrated in the hands of the latter.

Mr. Cornwall.—As a preliminary measure, the works in the district budget for the year will probably be found sufficient, and they could be utilized tentatively. The opening of special works before the necessity for them is apparently established tends to demoralize the people and does more harm than good. At first applicants might be admitted upon a task-work calculated to give them a somewhat lower rate of pay than ordinarily obtainable: and if numbers come upon those terms it would show that distress was increasing and the time for opening special works had arrived. Then the large schemes reserved for such occasions can be taken in hand.

The question as to the employment of large numbers at few places or smaller numbers at more places seems entirely dependent upon the amount of supervision Government is prepared to pay for. Large numbers at few localities are more easily supervised, and the work is consequently better and more cheaply performed. The cost of removing the huts as the camps are moved is nominal, and frequent changes are, from a sanitary point of view, to be recommended. All such works should be left under the immediate control of the Public Works Department. The district engineer should be informed by the Collector of the work he was to take in hand from time to time, and a sufficient staff of officers allotted to him to enable proper supervision to be carried out. The relation now existing between the collector and district engineer might be retained with advantage; the former having a general superintendence of the works, and the latter being responsible for carrying out all orders. The employment of the civil staff in immediately supervising works seems objectionable, inasmuch as it necessitates other officers being appointed to do the ordinary district work; and in the lower grades it is better that outsiders should be employed upon superintending the actual relief works than that tahsildars should be deputed for this purpose, and their places filled by men new to the district. By making over the relief works to the direct superintendence of the district engineer and his establishment the civil staff of the district has some slight degree of leisure for systematic inquiries village by village. In the event of famine being either imminent or being actually present, Government will presumably in future, as was the case in the North-Western Provinces last year, have in readiness certain projects for execution in each district, and delegate to the commissioner power to authorise collectors to commence such works when necessary. On the work being started, the collector and district engineer should be in direct communication with each other, and it should be left for the collector to decide, with reference to his knowledge of the general state of each pargana, what works are from time to time to be undertaken. The district engineer, in his capacity of officer in immediate charge of the works, should be responsible for carrying out all orders of Government; but it will of course be the collector's duty to inquire frequently and ascertain whether all that can be done is being done, and to see that no departmental friction interferes with the attainment of the objects in view.

Mr. Webster.—Yes. I think that in cases where there is reason to believe that the distress is likely to be only temporary, the applicants for relief should be employed on the ordinary budget works under the Public Works Department.

When distress increases and it appears probable that it will be more than temporary, special works should be opened; it would then be the time to take out the matured projects above referred to and put them in hand.

The work should, in my opinion, be so arranged as to collect comparatively large bodies at few localities. Supervision of every kind, professional, sanitary, organizing, &c., is only efficiently possible when the people are collected in comparatively large numbers. The system of having numerous small bodies of labourers on relief works scattered all over the country is open to every possible objection. Waste, peculation, and malpractices of all sorts can go on unchecked because of the almost impossibility of efficient supervision over such scattered bodies. I would place all such works under the Public Works Department, because the officers of that branch are in the habit of supervising works, and consequently know much better than the civil officers what amount of work a labourer is likely to be able to render, and are therefore far less likely to be imposed upon by persons desirous of getting the maximum of relief with the minimum of labour in return for it. I would work through the existing district and divisional establishment. Putting the works under the district engineer and his subordinates, ordinary and extraordinary, I would leave all arrangements primarily in his hands with one exception—the district officer should select the works for relief and should see them put in hand in order of their utility, as noted above. The district officer should be responsible that adequate arrangements are made for food supply and for payment of the labourers. Sanitation and arrangements for shelter should be left to the Public Works Department. If the district officer should be of opinion that the works are not being carried on satisfactorily, *i.e.*, that the rates are too high or too low; that the tests prescribed by Government are not being properly carried out, or that there is any other reason to be dissatisfied with the way in which the Public Works Department is doing its work, he should not issue orders direct, but should report at once to the commissioner of the division, who will depute his executive engineer to inquire into and, if necessary, to rectify matters.

Mr. Adams.—Assuming that there is still a prospect of saving the harvest, and that consequently the distress may be temporary only, I am certainly of opinion that as far as possible ordinary works only, *viz.*, those which would have been constructed in the ordinary routine from the budget of the current or the following year, should be used for relief.

I am most decidedly of opinion that the work should usually be under the charge of the agents of the Public Works Department.

With reference to the cause, "character of the people," I would point out that in this part of India the objection of the people to going to any distance from their homes for receipt of State aid is so strong that it will always, I believe, be necessary to recognize it in greater or less degree, and to supply work within what they consider a reasonable distance. But so far as is possible, having regard to this and also to the possible supplies of food and water, I think that labourers should be collected in comparatively large numbers. With large bodies supervision of work and proper adjustment of relief would be much easier than with a number of small parties of labourers often scattered at considerable distances from each other.

Mr. White.—In temporary distress, applicants should first be employed, as far as possible, on the ordinary works in progress in the district. At this stage there should be no test but that of full labour. As this source fails, relief works should be opened, and they would be all the better if situated in the distressed region and in the vicinity of the people's homes. The works should be professionally under the Public Works officers, but otherwise they should be under the orders of civil officers. The responsibility should rest on the district officer, but then he must be armed with full powers. The other queries in this question are better answered by higher authority.

Major Liston.—If the distress is only likely to be temporary, I am strongly in favour of employing applicants for relief on the ordinary works in progress. It must always be borne in mind that the cultivating classes have not only themselves and their families to support, but also to look after their bread winners, their cattle. If special relief works are at once opened and the famine rate of wages given, a cultivator must not only come to them himself but must bring his whole family, for what he earns is only sufficient for his own bare subsistence. On the ordinary works in progress, he may earn enough to support himself and those of his family whom he should leave at home to look after his cattle and any small amount of cultivation which may remain to him; and as long as the distress appears only to be of a temporary character and confined to certain portions of the district, the best mode of relief is to keep only the ordinary public works open and aid the cattle owner, if necessary, by giving small advances to keep his cattle alive; for if they die or the owner is compelled to sell them, the said owner becomes a beggar and a loafer on the works, and in the end Government is the loser. Once let a man lose his cattle, and there is, owing to the poverty of the district, no hope for him. I would at every risk keep the cultivating classes to their own legitimate work in this district as long as possible. I have discussed this question over and over again with the zemindars of this district, and their universal opinion is that when once a man gets accustomed to road work, he in many cases prefers it to field labour, and cultivation suffers.

With regard to tests I have had no experience. I would only open special works when the distress has reached such a height that the ordinary public works cannot supply sufficient work.

The experience of 1868–69 leads me to advocate the collecting of applicants for work in large numbers at a few localities; I found then that where employment was given to smaller bodies scattered over the district, the work was scamped, the people not properly paid, and money wasted. On the large works, though the said works were miserable failures as regards utility, the people were under the supervision of the civil officers, sufficiently paid and well cared for.

Such large works as I advocate should, in my opinion, be placed under the Public Works Department officers for work; but the civil officers should also exercise a general supervision.

Mr. Gardner.—Whether ordinary works in progress will afford relief depends on their character. Earthwork alone seems fitted for relief operations. The only works usually in progress are ordinary repairs of unmetalled roads. The sum allotted for these is very small, and the work is usually completed during the month of November. In most districts, however, there are unmetalled roads which require raising and improving, and the work is eminently suited for relief purposes. The same remarks apply to deepening of tanks. Abundance of works have been already selected and approved; all now necessary is the sanction and the money.

The system should be the same as at present. All large works should be under the personal charge of officers of the Public Works Department; minor works might be placed under the tahsildars (native sub-collectors) under the same restrictions as at present.

The great thing is to begin relief works at the right time, and to persevere in them. If relief works begin too late, the people get into a low state of apathy, in which they are unable and unwilling to travel from their homes, and unfit for and unwilling to work; they should be kept going long enough for people of the neighbourhood to be aware that work is to be

got on them; if they are opened for a few days and then closed again they do no good, and when re-opened the people do not believe in them. At relief works I would have no tests at all as to fitness of applicants. All persons willing to work, and fit to work, should be admitted. If relief works have been taken in hand in time, few persons will have become debilitated or unfit for work.

Relief works at great distance from men's homes will attract only those classes which are in the habit of looking abroad for work; in this district the *Nunia* or "navvy" clan. If the work is to help the ordinary labouring classes, it must be opened nearer to the people's homes.

Mr. Daniell.—Where the ordinary district works are suitable to relief purposes they should be utilized as far as possible for relief. The tests must differ according to the state of pressure, the time of pressure at which works are set going to aid in relief, and the condition of the people. Special works would be open on failure of ordinary works to meet the necessities of the case. Arrangements must differ so much according to the numbers who attend the works. For large numbers, works should be, as much as possible, kept distinct; (1) for able bodies who can do a good task for their wages, and who will leave the work whenever their usual labour is in demand; (2) for inefficients who should be placed on lighter work, supported by relief camps, and by means to have medical supervision, and who would cling longer to the works than their stronger brethren. The class (1) would be particularly under Public Works Department; the class (2) would be ordinarily under Public Works Department. The civil and medical officers would, however, have a voice in the amount of work and general treatment of class (2).

So long as the classes are kept separate there is no objection to concentration of labourers. Petty scattered works are objectionable, except perhaps to meet an exigency to last over only for a very short space of time.

Colonel Fisher.—If I thought distress only temporary, or I was not satisfied that it was indicative of approaching famine, I should, having ascertained the area affected by scarcity, throw all the Public Works Department assignments for repairs, maintenance, &c., for the year into that area. If this did not suffice I should give the people (as elsewhere suggested) *takávi* advances on the security of *malguzars*, and make the people understand that the labour of each receiver of a takávi advance was hypothecated to me to the extent of that advance, and that I would allow each village patti, or pargana (they being collectively responsible) to work off the obligation undertaken as soon as my projects had received Government sanction. I would have no tests for applicants for relief; indeed, they would not be required under the system proposed, and tests are always more theoretical than practical, and are liable to much abuse with native agency. I do not approve of "special works;" they have the disadvantage of being constructed for a special purpose, and a tendency to be very useless, once that purpose (which was often only a temporary one) has been effected. In fact they are generally productive of wasteful expenditure, are seldom of permanent benefit to a district, are always prepared in the hurry and excitement of a pending crisis, and are practically past recall before the experience which famine gives has been gained. Under the system I propose special works would not be sanctioned at all, but fully matured projects after the strain of providing food for the people was over, and when all defects in lines of communication had been fully disclosed. If special works are to continue, then I consider the supervision of the labour and preparation of daily labour rolls should alone be entrusted to the Public Works Department; the payments to the people should invariably be made by the civil authorities. I speak with the greatest confidence on this point, as I tried it last cold weather with the most marked success. The Public Works Department overseers are thus removed from the temptation of entering paper men on their rolls, and there being no profit to be made in that way, they exact a much larger proportion of work. Of course no civil officer under the rank of a tahsildar should be employed in distribution of wages to the labourers. In Garhwál the district officer is also the assistant engineer, and the responsibility rests on him for seeing that all needful steps are taken by all branches of the public service. Under the system I advocate the selection of works on which takávi advances are due would be made after, and not before, the famine had taught us which were the works likely to be most useful or remunerative.

Colonel J. Reid.—The distance test is very necessary. Our rates of subsistence wages even are higher than would be given for ordinary field work in their villages; and when people can get work from us near their homes they very naturally prefer the more highly-paid Government employment. At this moment we find that very many persons go to their homes when ordered to a work at some distance from them, and in some cases at least we find that workpeople from localities in which distress is known to be exceptionally severe make no objection to a move. The general inference to be drawn is, that those who go away do not require—anyhow do not urgently require—Government aid, and that those who remain really are in want of assistance. As to the nature of works to be undertaken, this must depend upon circumstances; here there is no scope for large works, and we must take what we can get. The impression I formed when our relief works were first started was that some of the subordinates of the Department Public Works were rather too rigorous in exacting tasks beyond the physical capacity of some of the workpeople, and with regard to others did not make sufficient allowance for the fact that people, even in good condition, employed on work to which they were quite unaccustomed, could not perform what would be a light task to a skilled labourer. I may be in error, but as a matter of fact persons undoubtedly in urgent need of assistance did leave the works because of the tasks exacted from them; in some instances large numbers did. I am inclined to think that in some instances details of the distribution of work were not sufficiently attended to, and that the small out-turn of work was caused partly by this defect in the arrangements. It might occasionally be found convenient to place small works inconveniently situated under civil supervision, but our civil officers are fully occupied with their legitimate duties; few of them have much experience of, or speciality for, such operations; and as a rule I have no doubt relief works should be placed under the Department Public Works, the Deputy Commissioner retaining control as with respect to ordinary local funds works, and being responsible for seeing that all needful steps were taken by all branches of the public service concerned.

Mr. Harington.—To apply the distance test in a bitter January in Oudh is next door to manslaughter. To omit it in the warmer months is to throw away a valuable means of eliminating those who have not yet reached the stage of real distress. With the *proviso* that an infirm gang is always kept up and considerately enlisted, and that the supervising officer exercises ordinary intelligence, honesty, and fairness, the task system cannot be too steadily insisted on for those who can do full work. It follows that when the distress is only partial, small local works in the immediate neighbourhood of the sufferers are necessary for the months of December and January. Large ones are clearly advisable for the warmer months.

During the rains the expediency of large works is counterbalanced by the great risk of cholera. On the other hand much rain should soon do away with the necessity of relief works.

Captain Currie.—Employ those willing to work on ordinary works in progress. The test should be a full day's work for a full day's pay, with fines for short work down to a bare subsistence allowance. Special works to be opened if ordinary works were found insufficient to employ all who came to work. Such works should be arranged so as to collect the applicants in large numbers at a few localities at some distance from the villages of those coming to work never in small works close to the applicant's villages such works could not be supervised properly, and would only compete with the local labour market. All works should be under the Public Works Department rules and Public Works Department supervision. The district officer in this district has his public works officer next room to him, so that there is no difficulty as to communication. The works should be chosen by the Deputy Commissioner in consultation with the Public Works officer. The whole responsibility for seeing all needful steps taken by all branches should rest with the Deputy Commissioner, who should be fettered as little as possible in his action, and who should report fully to commissioner of division.

Mr. Quinn.—The measures I adopted were to open poor-houses at each of the tahsíli towns. This secured the supervision of a tahsíldar and hospital assistant. Municipal works sanctioned in the budget were taken in hand, and additional works projected; the district engineer was instructed as a tentative measure to take on at a low wage all who applied for employment on a few selected district works. When it was found that people flocked to these works, notwithstanding the low wage, and that many came from a distance, a few regular relief works were opened. This system of only extending relief works as the necessity for them was proved, worked well. The class who apply for work; their physical condition; the proportion to the whole borne by men, women, and children; and the distance the applicants have come from, require to be all carefully watched. As long as it is possible, I prefer that the people should be given work within a reasonable distance of their homes, and have at least the option of returning to them at night. When famine increases in severity, large works must be set on foot, and this requires the assemblage of workmen in large bodies. To these works I should draft off the able-bodied men and women, under the inducement of a higher wage, leaving the weak and infirm, and those encumbered with families, to be employed on petty works near their homes; but as regards an absolute rule that all relief labourers are to be employed in large bodies and to be hutted, it should be borne in mind that huts are built for those who leave homes of their own; that the sick, the old, the infirm, and young children have all to be dragged to long distances from their homes, or else a special and expensive village organization has to be made for their maintenance and attendance, during the absence of their natural supporters, and that camps, if epidemics are to be guarded against, require special sanitary arrangements and medical supervision. I do not think it would be wise to incur all this expense, and to put the people to so much hardship, simply to secure a test that those relieved were really in want. The special works to be opened should be selected by the district officer in consultation with the district engineer. All relief works should be under the Public Works Department, and the head of the district should be generally responsible.

Mr. Blennerhasset.—If the district officer believes the distress to be only temporary, relief can be supplied by employing people on road repairs and similar ordinary works in progress, both district and municipal. The tests should be the ordinary ones, and the distance test should be applied if possible.

Special works should be opened if the ordinary works are insufficient to keep the people from starving. The special works should be as few as possible, so as to admit of good supervision, and not near the houses of the applicants.

A combination of public works and civil supervision appears preferable to handing the works over entirely to either department. The Public Works can enforce the labour test better than civil officers, and the civil officers are better qualified to see that no one in want is refused work. The Public Works officers in this province are already in close connection with district officers; the latter should select the works for relief, and the chief civil officer of the district should be responsible for all officers working at their respective duties.

Mr. Lumsden.—Before it is known whether incipient distress and dearth of employment will or will not merge into famine, all applicants for work should be employed on the ordinary local and municipal works which may be in hand Contract work should be put a stop to on all such works for the time being (I refer to works suitable for the employment of unskilled labour), and special arrangements made for carrying on these works by the people who come forward and ask employment at subsistence rates.

At this stage I would not apply any special test for admission; task-work should, however, be rigorously exacted, the wage kept down to mere subsistence rates, and the applicants for work should be required to provide their own tools, baskets, &c.

When the number of applicants for admission on these works become excessive and the symptoms of distress increase, special works previously selected as suitable and held ready for the occasion should be opened.

While the numbers, though beyond what could be employed with advantage on the ordinary works in hand in the district, are still manageable on minor suitable works specially selected, and there is any hope that the pressure and distress are of a temporary nature, and will shortly either disappear or at least greatly diminish, I am decidedly of opinion that it is more politic to employ comparatively small bodies of people at a number of works in the distressed regions than to concentrate large bodies at one or two heavy works.

While there is any reasonable hope that the pressure will pass away, it seems to me very bad policy to require the applicants for employment to leave their homes and move away to distant works. A native is usually averse to leaving his house or village, and his readiness to do so in order to obtain employment on subsistence wages at a distance under task-work rules, is most certainly one of the best tests we have of the reality and severity of the pressure; and it must be remembered that at what may be called the *slack* season even in ordinary years there are a large body of people who would flock to works opened near their houses at our subsistence rates of wage; but bearing all this in mind, it must not be forgotten that it is those natives who once leave their homes and take to our large works, bringing their little all with them, that become the "*habituals*" on our relief works, whom it is so hard to get rid of even when the times improve.

It is objectionable, therefore, in my opinion, to make *any of the classes* who come on our works leave their homes at this initial stage, while there is hope of the distress proving temporary, and the number of applicants are still, with reference to what they will be should the pressure continue, comparatively few; and it is specially objectionable to make any of the actual cultivators of the land, a few of the poorer among whom will generally be found to require assistance, move away to works at any great distance from their villages, for while there is any hope that the pressure will shortly diminish, or that any change in the weather might afford the cultivator profitable employment in his fields, it is manifestly advisable, if possible, to provide *him* with work within a moderate distance of his village.

As soon, however, as the numbers increase to such an extent that it is difficult to provide suitable employment for them on small works of the description

alluded to, or to provide the necessary establishment for supervision and management of a large number of such works scattered over a district, and particularly when it is almost certain that the distress is on the increase and must last for some time, say until the next harvest is reaped, it then becomes expedient to concentrate the people on large works at a distance from their houses, providing for each work a suitable staff of Public Works Department and civil officers. Concentration will at this stage be a decided advantage: it will keep many off the works who would come on them were they within easy reach of their homes, and it will be more practicable for the Public Works and civil officers to make the necessary arrangements for supervision, management, payment, and the procuring of supplies, when the large body of labourers they will at this stage have to deal with are concentrated at one or two centres.

As regards relief works being under Public Works officers or civil supervision, I am decidedly of opinion that as soon as *special* relief works are undertaken they should be under the supervision of officers of the Public Works Department.

BENGAL.

Mr. Barlow.—The usual practice, which appears to be the right one, is to push on ordinary district works of all kinds and under all departments. These works are tentative. No particular tests are applied. All applicants are admitted at the ordinary wages of the district. If these works draw an unusual number of people, and the condition of those who come is bad: in short, if the reality and extent of distress becomes marked, then the next step is to open what are called relief works in places where, probably in respect of the most serious failure of the crops, distress is severe, and which are beyond the reach of the aid afforded by other works. The question of whether such relief works should be few or many, and how they should be arranged according to locality, must of course, depend upon the degree of distress; but it seems to me to be already decided that a restricted system should, as far as possible, be followed, by the consideration which we have in view, that the distress is supposed to be temporary. I think that it is only when distress approaches, and is manifestly progressing into famine, that considerations of economy and security against abuses can afford to be disregarded, and as a matter of convenience to the people themselves, work can be arranged so as to be available at every man's door. In the case before us, work might be provided at a few convenient centres, so that willingness to go some distance from home to obtain employment might be used as a test of the necessity of the people frequenting the works. Under the present system in Bengal, where the duties of the officers of the Public Works Department are confined to provincial matters, the question as to any choice between departmental and civil supervision for these works could hardly arise very early; unless the distress had passed rapidly beyond the management of the local authorities, and Government had stepped in with special measures and organization. In ordinary cases intervention of the kind would not occur until famine was deemed to be approaching. Wherever and whenever possible, however, I prefer the conduct of works by the Public Works Department under an energetic European officer constantly upon the spot; because I believe a better return for the money spent is obtained. Under civil supervision, such as it is, there is great waste of money. The chief argument in favour of civil works is that the Public Works Department cannot deal with people deteriorated and wasted in physique; this should not apply in the case of distress believed to be temporary. The district officer must certainly be the person upon whom the responsibility rests in the district, for seeing that all needful steps are taken by all branches of the public service concerned. This fact, as far as my experience goes, has already been so far acknowledged that no want of accord or friction between Public Works Department officers and district officers, has been practically felt in carrying out relief works together. Certain relaxations of departmental rules are allowed under the necessities of the case, and after the outline of the system for working to be followed, and the responsibility attaching to both sides, has been laid down by Government, the common superior, it is found to answer. One thing only is essential, and I believe has been observed. It should anyhow be provided for by a strict rule in any famine code. If anything special and unforeseen occurs or has to be provided for, the officers of the Public Works Department after consultation with the chief civil officer, must accept his decision, pending orders of Government. This is necessary to guard against a deadlock.

Mr. Worsley.—When a district officer believes distress to be temporary, he should afford every opportunity to applicants for employment on the ordinary works in progress *at the ordinary rates.* If the applicants become so numerous that these works cannot receive them, the district officer should open special works in different localities at the ordinary rates. The only test of admission should be willingness to work at the ordinary rates. The works should be under civil supervision, and should consist of thorough repairs to existing roads. They should be opened in such a manner that any villagers might obtain employment within three or four miles of their houses. It is in my opinion a great mistake, except in time of severe famine, to open works close to the people's houses. If, for instance, I had reason to believe that the whole length of country between Seetamurhee and Mozufferpore was in a state of distress throughout an average breadth of six or eight miles, I should consider it sufficient to offer employment along the whole length of the Mozufferpore Seetamurhee road in the first instance. The villagers who happened to live near the road would of course have an advantage over others; but the advantage would arise from accident, not design. I have had very little experience of the Public Works Department in time of famine. A few small works were under the Executive Engineer, Mr. A. Urquhart, in Mozufferpore Sub-division in 1874, and others were under another Department Public Works officer in Tajpore Sub-division; but the systems under which civil officers and Department Public Works officers employed labourers differed more in name than in practice. Relief works should be selected by the district officer, who should be held responsible for taking all needful steps.

Mr. Magrath.—To my mind the work should be special under special Public Works staff. It should not be brought near the people's homes or made easy for them. I do not think any test is necessary when men are properly supervised and bare subsistence is given as wages.

I have already said that I considered it in every way undesirable to mix up famine relief works with other works. They should be arranged so that the work may come to be permanently useful, and under skilled supervision of officers of the Public Works properly appointed and in sufficient numbers. They should not be taken to people's homes, and should employ as many people as is convenient for the staff to supervise. If many works are carried on, skilled supervision becomes very expensive, and people are

led to wander about and see where the work is lightest. Besides this, if the people are near their homes, facilities are given to them to shirk their work and only come to be counted, or at least to idle at home if the officer in charge is absent at any time. The cry of demoralization and a tendency to pauperize the people raised in 1874, with regard to the large works, was utterly disproved. The people returned to their fields from the large works as soon as the cultivation of the crops came on, but tried to keep up the small local works to spend any leisure time they might have. I think I may safely say that the experience of all sub-divisional officers was against small local works as giving opportunities for idleness, peculation, and scamped work that did not exist where the larger works were properly officered.

I cannot conceive how there can be any doubt about the employment of Public Works officers for the purpose. The work is such as they alone are technically acquainted with, and they alone can supervise efficiently. The Public Works officers should be responsible that the work given to them to do is efficiently done. The picking out what works should be done would rest with the local authorities. If the Public Works officers are of opinion that they can only efficiently employ a certain number of people on a particular work, they should acquaint the local authorities, who would fix upon such other works as may be necessary. No responsibility should rest on the Public Works officials, except seeing that the work is properly done and the labourers regularly paid. All other matters should be the work of the local authorities. No difficulty was found in 1874 in their working together. In picking out works those should invariably be selected which have already been properly planned, and, if possible, sanctioned by Government.

Mr. Hodgkinson.—If the distress is likely only to be temporary, it is possible that employment may be found for those requiring it in the ordinary works in progress under the Road Cess Committee or municipalities on the usual wages at first. The opening of special works indicates a greater degree of pressure, and consequently a lower calibre and morale in the applicants for relief; then other tests must be employed. What tests are best will be discussed later on in dealing with chapter III. Special works should, as a rule, only be opened when it is found that the administration of the ordinary local funds is not likely to afford work on a sufficiently extensive scale for the requirements of the people.

In a district where for agricultural purposes labour is being constantly wanted, it is very much better that the works should be small and numerous, so as to keep the people near their houses to resume their ordinary occupations as opportunities offer. The difficulty, of course, is to have efficient supervision in Sarun. The different indigo planters have afforded material help to Government officials in this respect. In the earlier stages of the distress I should certainly prefer scattered works, if there was a reasonable prospect of the distress being only temporary and not resulting in a real famine. If, however, a real famine appeared imminent, the large sums of money necessary to meet it could not be advantageously and economically spent on small works, and the difficulty of supervision would be much enhanced. A canal, a railroad, or some such large work should be commenced, which would have the advantage of concentrating the workpeople along a long line of relief, and be of material use in averting or coping with future famines. From the nature of the work it would be placed under Public Works officers, but the officers in charge of it should be required to submit to the district officer periodical reports of the numbers and conditions of the labourers, and of the progress of the work, along with indents for the grain, &c., required for the purposes of payment. The district magistrate will be generally responsible for the administration of district in relief matters, except in cases where it may be expedient to divide the district and appoint a special officer for the purpose of famine administration.

Mr. Toynbee.—If the distress seemed likely to be only temporary, the ordinary works carried on by the district engineer from Road Cess Funds would probably suffice. If it seemed to the district officer that something more than these should be undertaken, he would arrange with the district engineer to open some special work suited to the circumstances of the case, taking especial care that such work should be of real and lasting benefit to the district, and not the mere throwing up of earthwork where it was not required.

If distress appeared likely to turn into famine, it would then be necessary to ask for aid from provincial or Imperial funds, and to commence some great and lasting work, the plans, &c., of which would presumably be ready beforehand. In the last-named case the Public Works Department would have the supervision of the work; in the two former the civil authorities, advised by the district engineer.

In all these cases it would be advisable, for the sake of better supervision, to hut the labourers on the works. When first opened, the work being task-work, all comers would be employed at ordinary rates. No test would be requisite. Special works should be arranged, not with the main object of suiting the comfort and convenience of the people, but to ensure the expenditure of money on a lasting and permanently beneficial work. Such a work, once begun, should not be left to be completed when another scarcity occurs; but should, so far as is possible, be made useful and remunerative at once. The primary responsibility for all measures of relief within the district should rest on the district officer; but he should have extra aid and establishments allowed him, so that his ordinary work might not suffer by the pressure. He should, if matters assume a more serious aspect, be set entirely free from ordinary routine work, and the help given him in the way of an extra staff would better be employed in ordinary work—those officers who had been longest in, and had gained most experience of, the district being set free for famine work. His right-hand man, as regards works, would be the district engineer. For the supervision of charitable and other forms of relief he would require active and experienced native deputy collectors or others.

Mr. Finucane.—The winter rice crop of 1875 was seriously deficient in a belt running along the Nepal frontier and extending through the Soopool, Madhubani, and Sitamarhi sub-divisions. The failure was most marked in the northern half of Alapur, where such competent authorities as Messrs. Geddes and MacDonnell described the rice crop as an out-and-out failure. In the southern half of the pergunnah the crop was probably an eight-anna one. The part of the pergunnah where the crop was most seriously deficient included an area of somewhat less than 100 square miles, with a population of 30 to 40 thousand persons. The only measures of relief which it was found necessary to adopt were—

1*st.* Distribution of gratuitous relief to old and infirm persons.

2*nd.* The expansion of ordinary road works in progress under the Raj engineer.

3*rd.* The stopping of rent realizations.

4*th.* Small advances for seed grain.

All applicants for employment were admitted on the road works and were paid at ordinary contract rates, which in this tract were so very low that an ordinary labourer could not earn more than 1½ to 2 annas a day. Light labour gangs were also formed on these road works; women and children and weakly persons were admitted to these gangs, and paid a daily wage of from four to six pice. The works were carried on by the Raj assistant engineer at contract rates and under the ordinary departmental rules. As civil officer on the spot primarily responsible, my

duty as regards these works consisted in seeing that the labourers were regularly and fairly paid; that all comers were admitted; and also in deciding whether particular individuals were sufficiently strong to be put on piece works, or whether they should be admitted to light labour gangs. In addition to relief by employment given on road works carried on by the Raj engineer at the expense of the Durbhunga estate, employment was also given on tanks, of which large numbers were made by jeyt ryots (village headmen) at their own expense, or from sums advanced by way of loan, which sums have been since repaid.

Mr. Mackie.—If the district officer believes distress will be but temporary, he should employ applicants on ordinary works just as in an ordinary year. If the applicants, however, largely exceed the numbers the works can accommodate, he should open a few special works in detached localities where rigorous task-work will be enforced, and so situated that the majority of workers will necessarily have some distance to travel before they obtain employment. These should be of such a nature that they do not commit Government to a very large expenditure, and yet they should not be so numerous and widely scattered as to render close supervision by the ordinary establishments a matter of difficulty. I would place all works, so far as regards professional details and payment, under skilled supervision, leaving their selection to the revenue officers. I would place no restriction on the admission of applicants.

Mr. Kirkwood.—Even when only a one-third failure is assured over any considerable area, if there are no works in progress, arrangements should be made for opening works whenever a demand for employment may arise. This should be done even before the harvesting of the crop. These works should be conducted on the same principles as ordinary works. Where there are local works in progress under any of the public departments which employ labour, applicants should be sent to them. When the failure assured is greater the works will have to be more numerous. In the first months of distress, works should be opened in a comparatively few localities in the distressed parts. These should be large and important works. Directly distress appears to be deepening by unusual numbers flocking to these works, some of whom come from some distance, or are not ordinary earthworkers, works should be multiplied throughout the distressed region. When the distress shows itself to be of such a nature as would amount in many instances to starvation, if it were not for Government intervention, works should be opened to such an extent that every large village should have some work available within a distance of (say) four miles. For this purpose long works, such as roads or canals traversing the distressed tracts, are much better than tanks or reservoirs. Work should be simultaneously commenced at several places throughout the length of a road or canal, such places being about six miles apart, and the villagers going to the gang nearest their village. All these works should be under the Public Works officers, and every sort of human being should be admitted to them, the only condition being that for so much work he or she gets so much pay. The rate of remuneration should be raised with the increased price of grain. When prices approach double ordinary rates, the pay rate on these Public Works Department works should be somewhat raised. When prices are nearly two and a half times their ordinary figure, the rate of remuneration should be 25 per cent. in excess of the ordinary rate; the difference being left for the labourers to make up by increased work, economy, and abstemiousness. When the price of food is about trebled, the rate of pay should be increased by 33 per cent., and when quadrupled, or nearly quadrupled, by 50 per cent.

At the same time, when still increasing numbers applying for work, many of those persons not being ordinarily engaged in that capacity, and the price of food rising to nearly three times its ordinary rate, show that distress must be getting severe, separate works should be opened in the vicinity of every village for light labourers. These light labour gangs should be under the control of civil officers. They should not be at work within two miles of the other gangs, but, with that reservation, they may well be employed on the same sort of earthwork as the other gangs; accuracy of slopes and dressing and turfing being, when desirable, left to the subsequent attention of the regular departmental officers. Into these gangs no man or boy above 12 years of age should be admitted unless his physical appearance plead for him; from them no woman (except a few professional earthworkers) or child should be excluded. Task-work should be strictly exacted. The rate paid should be about 50 per cent. in excess of the rate paid at the same time on the Public Works Department works; but, in all other respects, these light labour works should be carried on upon the same principle of "no work, no pay." Of course such women and children as may desire to do so could go with their male relatives on to the Public Works Department works and work at Public Works Department rates. The two classes of work may, with perfect propriety, be going on at the same time, not only without interference, but with mutual advantage. These weak-body gangs should be under civil officers, because they are more likely to be free from rigid departmental doctrines, and to remember that the very essence of the object of the works which they are supervising is the saving of the lives of those who are feeble or unaccustomed to earthwork. To that idea must be subordinated excellence of work and economy of construction, both of which objects should nevertheless stand well forward in the mind of the supervising official. To encourage into energy the listlessness of incipient starvation, and while that encouragement is going on, to dole out some small extra reward to the struggling new comer, will have a large call on the attention of the supervising officer. When anyone first joins a relief work in anything approaching an emaciated state, he or she should generally be given food or money sufficient for a few days support; during this interval some little work is done, something is earned, and strength is gained; with these earnings the earnings of the next week are supplemented, and by that time probably the recipient will be in a position to earn enough for self-support. Sir George Campbell in his evidence before the Indian Works Parliamentary Committee has recently expressed a weighty opinion against the universal application of task-work in famines. He thought that, when the people were emaciated, any such test would lead to the people refusing work; for it would be impossible to distinguish between what work one man could do and what another. I would venture to say that such discrimination is possible to such an extent as I have above noted, and that that is all the discrimination required. The experience of two famines has taught me this; and where than in Orissa could emaciation have been greater? Under such a system as the above, which was worked successfully in those two famines, I believe that no one who can work will refuse to do so. Very many in want cannot, owing to physical or caste inability, come on to earthworks; some, as mothers with children at their breasts, it is not wise to ask to come; but all others will readily come. For the residuum work of a suitable nature like spinning and weaving must be provided, or relief must be given gratuitously.

For all works and all branches of the public service during times of famine the collector of the district should be responsible. This should continue to be the case even though he is provided with the aid of a civilian co-adjutor of ample experience to take charge of the famine department of his district cares. Differences of opinion between that co-adjutor and any other department should be referred to the collector. The Public Works Department works would be subordinate to the control of the collector,

Ch. I. Qs. 6.

Bengal.

as to the localities where they are to be opened, the rates to be paid upon them, the persons to be admitted to them, and the frequency and manner of payment. Any important differences of opinion with other departments in his district or with his co-adjutor, of which the collector cannot himself satisfactorily dispose, should be referred by him to the commissioner under whom he may be. To each much distressed district there should be attached at least one officer of the standing of an executive engineer, who would take the instructions of the collector, and be responsible to him for the conduct of the Public Works Department works in the district in every respect, except professional correctness and excellence and the control of accounts. On those points the executive engineer should be responsible to his superior departmental officers.

Anything in the shape of a distance or poverty test before admission to the works appears to me opposed to both humanity and economy. I regard a distance test as an invention which is pernicious in every way. If people have to return to their homes, it wastes valuable time which might be expended in earning money. If they do not return to their homes, it exposes them to nights of damp and cold, an exposure which works ruinously on enfeebled frames (*vide* Sir George Couper's opinion on the North-West Provinces mortality of last winter). Many will refuse thus to emigrate from their homes, and will prefer to face death at home, together with their female relatives, to leaving their women and children desolate and helpless, and to wandering forth themselves to face unknown ills in an unknown country on unknown work among unknown people. The evil of the women and children accompanying the males of their families in this emigration movement is hardly less. Without a home to sleep in the women, if they survive, rapidly degenerate morally, and the children often fail to stand the exposure. The cost of hutting is great, the home falls into ruins, the odds and ends by which, at home, even in the worst times, life is to some extent supported have no existence. As for driving persons possessed of any property or in good physical plight from the earthworks, it seems to me a plan deserving of nothing but condemnation. I venture to regard the introduction of that plan as a serious error in the administration of the recent famine in Bombay and Madras. It seems to have been regarded as a subject for regret rather than for deep congratulation that so many were early in the year flocking on to the works in search of employment, instead of wasting away and dying slow deaths at home after parting with the remainder of their little all. Let but task-work be insisted on, and one has an unrivalled test of want. It seems to me to be much more economical to have these people in January in good plight on the works than to drive them off then to return, if still alive, two or three months afterwards with emaciated frames. They will themselves then be able to do but little work, and they will have left at home a starving wife and children, who must then be relieved gratuitously in whole or part, but who would have eked out existence till better times on the small family belongings, had the male members of the family not been driven home to help them to consume all their possessions in enforced idleness. I think there is scarcely room for doubt that a grievous degree of avoidable distress, and perhaps mortality, must be laid at the door of such a measure as this, whenever it is essayed.

Mr. Brookes. — The early applicants for work should be referred to the ordinary public works in progress. Municipalities and the Road Cess Department should be able to meet the demand when only temporary distress was occurring.

The labour test would be the best, as least likely to disorganize the arrangement of the works in progress.

Special works would only become necessary when the local fund works did not provide sufficient employment.

Small special works, not requiring the supervision of trained officers, could well be undertaken by the civil officers, assisted by non-official persons; or the district officer might have the services of an assistant engineer placed at his disposal to assist him in his arrangements for work, and the best method of carrying it out.

More important special works.—These, if arranged in too convenient proximity to the homes of the distressed, generally draw persons who are not in urgent need of relief.

It is better to arrange for comparatively large numbers in fewer localities. The labour is then more manageable; more useful work can be undertaken in this way, and with less cost for supervision.

Undoubtedly such works should be placed under the Public Works Department, where trained officers and subordinates could see to the work being properly carried out and without unnecessary expenditure.

Civil officers are placed at a great disadvantage when entrusted with such work, and although they may often be amateur engineers themselves, they cannot convert the temporary subordinates they entertain for the occasion into men of experience and ability, so that the work soon gets into confusion and all check is lost.

Bombay.

BOMBAY.

Mr. Hewlett.—I think that when it is clear that on account of the failure of rain there will be a scarcity of food grains, and when the price of grain has risen so that only 24 lbs. or 26 lbs. of grain can be purchased in the villages for a rupee, and if the market shows a tendency still further to rise, then the sooner relief works are opened the better. I am certain that by taking this action in the commencement of the late famine the Government has saved thousands of lives, for by it the people were prevented from sinking into such a reduced condition that aid, had it been longer delayed, would have been of no good to them. I also think that this action is the most economical to Government in the long run, as the people would then have some little stock of money which would supplement the Government rates and prevent the large majority of them requiring special treatment. I think that when it is determined to open works, all such should be under the officers of the Public Works Department. The organization under them, as far as my experience goes, is more effective, and the medical supervision becomes much easier by concentrating large bodies of men on works of permanent utility. In certain cases it may be desirable to have road works or the clearing of small tanks under civil officers, but I believe that the civil officers would be more usefully employed in inspecting villages, in drafting men and women requiring State aid found in them to large works than in supervising road making.

By this means you have all the people of a district under one management. Of course there can be one or as many more works in a district as occasion demands, but I am certain that for effective administration this plan, if adopted, would be found easier and more economical.

During the late famine the utmost difficulty was felt by the medical department in meeting the demand for medical subordinates, and the strain on it was excessive, but by concentration of large bodies in suitable camps, and I beg by this to carefully guard myself from any imputation of wishing to overcrowd camps, a more efficient supervision could be kept by the officer in charge over the labourers, whilst the medical subordinates would be able to devote them-

selves to the treatment of the sick, the elimination of weakly and reduced persons from the different gangs by frequent inspections, the separation into classes of those who require special treatment, and the general superintendence of the relief houses and kitchens. I should gladly have recommended for sanitary reasons that the weakly gangs should have been kept in villages and employed in village sanitation under civil officers, and in fact I did recommend this course at one time during the late famine, but it was pointed out it would demoralize the people, that efficient supervisibn would be impracticable, and that it would be impossible to prevent fraud, and in these conclusions I am obliged to concur.

Mr. Hart.—As regards temporary distress measures, my opinion is that at first the ordinary works in progress should be used for relief purposes, but provision should at once be made for special works under trained organization, for which large public (especially irrigation) works under professional supervision are best suited. On these large centres all relief labour should be concentrated as soon as all hope of averting famine is at an end.

However, till famine has completely declared itself, and while there is hope of agricultural operations being resuscitated by rainfall, local works are the more suitable as tending to keep the agricultural labourers on the spot, so as to take immediate advantage of any opportunity that might offer of obtaining a crop.

The arguments in favour of opening large works under Public Works officers are that such officers are professionally trained to the management of large bodies of labourers, and that on large works, engineering skill and technical knowledge will be required to conduct such works with economy and success.

Public Works officers may best be placed in direct communication with local civil officers by the heads of their departments, and the working of the whole should be supervised and controlled by a special officer in direct communication with the Government.

The responsibility of all operations should rest with the revenue commissioners and the chief or superintending engineer.

The selection of works should be on the principle of convenience, concentration and permanence of the employment likely to be afforded; in addition, of course, the elements of facility for shelter, healthiness of locality, and suitability of water supply must enter largely into the consideration.

Colonel Jenkin Jones.—The collector should request the executive engineers of the general and irrigation branches to provide employment for distressed persons on the public works in progress; and if necessary to start some new works for the special purpose.

Applicants should at first be employed on the ordinary works in progress, the able-bodied persons under the Public Works officers and the weaker ones under the local officers. The assistance of the municipalities should also be asked for.

As to test for admission, the civil officers of the district should make careful inquiries through the village headmen, as to the condition of the applicants for relief.

Special works should be opened when the ordinary works in progress are not likely to afford sufficient employment for the distressed persons.

It is preferable to employ the able-bodied people in large numbers at a few localities, the weaker people only being provided with work in smaller bodies in the neighbourhood of their homes.

As far as possible all relief works should be under the Public Works Department. Only petty works, such as the clearance of small village tanks, clearing tracks, and cutting prickly pear, &c., being left to the civil officers.

The officers and subordinates of the Public Works Department are from the nature of their ordinary duties better fitted to organize and overlook the labourers than the district officers.

The Public Works officers should consult with the Revenue officers as to the selection of new works to be started, the supply of food, and the applicants for relief.

Responsibility should be divided between the collector and the executive engineers, the former to ask for what is required in the shape of relief works, and the latter to carry them out.

Mr. Spry.—The district officer, supposing the distress to be only temporary, might first employ all applicants on such ordinary works in progress as required only unskilled labour. Should these works not appear sufficient, he might re-appropriate to similar works all grants entered in the sanctioned budgets for works requiring skilled labour, or which are otherwise unsuitable. On all such works both distance and task tests should be strictly enforced, also none should be admitted unless they brought certificates from the *taluka* or village authorities that they really require work. Special works should not be opened till it appeared that the works above enumerated were unequal to the demand, and the special works should be centralized as much as possible. A number of small works scattered about are difficult to supervise, and only demoralize. I am in favour of works being under the Public Works Department alone, as my experience shows me that civil agency fails after a very moderate limit. The civil officers have neither the knowledge nor competent establishments to deal with civil agency works, consequently a maximum of expenditure with a minimum of results ensues. The Public Works Department, on the other hand, know what work should be done, how it should be done, and whether it is properly done. The Public Works Department officers also have greater experience in enforcing discipline amongst the people on works. Besides this, in times of distress civil officers have many other important subjects to look to which are quite sufficient to absorb their time. As in general and important matters there is direct communication between the collector and executive engineer of the district, so in all matters of routine and in petty matters there should be direct communication between the civil officers in charge of talukas and the assistant engineer in charge of works situated in those talukas. But to prevent misunderstanding and clashing, there should be rules framed, suitable to the circumstances of the case, distinctly defining the province of each. Nothing is so likely to cause disaster as want of unanimity between officers of the respective departments.

The Public Works officers, in selecting works for relief, must to a great extent be guided by the civil officers, who are the best judges of the requirements of the district. On the collector, subject of course to the control of the commissioner, should rest the main responsibility.

Mr. Charles.—In organizing special works there can be no doubt that there should be always two classes of works dependent on each other, viz.: a civil work for the weak, and a Public Works Department work to which the civil labourers should be regularly sent as soon as they have regained strength.

To prevent confusion, the civil officer should have the final power of settling on which work a labourer should be.

The collector is undoubtedly the person on whom the responsibility should rest of seeing that the needful steps are taken by all branches of the public service.

Mr. Percival.—A very small pressure may be met by arrangements on the ordinary works under the Public Works Department and Local Fund Establishment; but as soon as it is certain that great numbers must be employed, large works under the Public Works Department should be opened. They should

provide work for large numbers at a few localities, otherwise the tests cannot be applied. Civil supervision in this district has neither means nor knowledge to control large works. The responsibility that sufficient works are provided rests with the collector, who must keep Government informed of what is required. The Public Works officers in charge of works must receive all persons sent by the collector, who is the judge to decide if a person is to be required to work or not. It is not unnatural that officers in charge of works should dislike having to take on people who cannot do a fair day's work, but if the collector sends people of feeble physique, the engineer must employ them according to their strength.

Mr. Propert.—Until the extent of severity, probable duration of the famine or scarcity has been as far as possible ascertained, all applicants should be employed on the ordinary works in progress as far as accommodation is available; if such works become crowded, special small works should be opened under civil supervision, the rate of pay on which should be fixed at the lowest possible figure consistent with the preservation of life. The acceptance of these very low rates of pay precludes, in my opinion, the necessity for applying a further test.

I have in the last answer described the circumstances under which *small* special works should be started. The opening of large special works must depend upon the demand for employment at low or famine rates of pay.

It has I think been clearly demonstrated during the late famine that all able-bodied labourers should be gathered together and employed on a few large works under the supervision of the Public Works Department, and that as far as possible they should work according to the ordinary rules of the Department.

The Public Works officers in charge of *famine* works should act in communication with the collector exactly in the same manner as the district executive engineer does with the district officers in *ordinary times*. Special works in times of famine do not, I think, require any departure from ordinary departmental rules.

It is to be hoped that from the present time works will be selected in every district for execution in times of famine or scarcity. There will then be no indecent hurry or confusion when the evil hour arrives.

The *general* responsibility on account of all remedial measures to be adopted must devolve upon the chief civil officer, *i.e.*, the collector. After full instructions have been received by members of departments, the departmental head must see that the officers immediately under his direction perform the duties assigned to them.

Mr. Norman.—In case of temporary distress, it is not, as a rule, necessary to open special works. All ordinary works should, as far as possible, be commenced, which should be carried out on a system of task work. If the distress increases, it may be necessary to attach famine gangs to these works, where those who are too emaciated to do a day's labour would receive a bare subsistence allowance. A hospital should be attached to each large work, where cases of sickness can be attended to. It may also be necessary to open a small relief list in order to feed the cripples whose relations are on the works. All works should be under Public Works agency.

When it becomes necessary to open special works, which will be the case as soon as the ordinary works are overcrowded, such works should be as large as possible, and should be started in well selected localities in different parts of the distressed area. Applicants for relief should not be employed near their homes.

All such works should be placed under the Public Works Department, because the officers of that department are best able to supervise large gangs, and because under professional superintendence the works are better carried out and less money is wasted. Civil officers, from want of training, are not fitted for supervising large public works. The executive engineers should, in communication with the collectors, select the works best adapted for relief, and they again would act under the immediate orders of their superiors, the commissioners and the superintending engineers. The responsibility of representing what measures are needful for the relief of distress must, in the first instance, rest on the collectors. The orders for the necessary works can only be issued by Government.

Mr. Moore.—I should arrange for sending applicants for relief on to the ordinary works in progress.

Applicants for relief should apply to the *Mamlatdar*, subordinate judge, sub-registrar, and chief constable, or other officer appointed for the purpose, who after satisfying himself that the applicant really is in want, should give him or her a pass on to some work.

If the ordinary works in progress are insufficient to meet the pressure, I would open a large special work; this is the best kind of relief, as it is not demoralizing.

The special works should be arranged at convenient centres, so as to collect comparatively large numbers in a few localities. I most strongly object to small and scattered works in the vicinity of the applicant's homes. The distance test is the best, and there is better supervision and management if the relief works are few and large.

The works should be placed in charge of the Public Works Department. I should prefer that the Public Works Department officers should confine themselves to the execution of the work only, and that the management of the camps, and the admission and rejection of labourers, and the food supply, should be under civil officers, because the officers of the Public Works Department in charge of works are not all acquainted with the language of the district and the people. But I am aware that this arrangement has its drawbacks. Financially it would be more expensive, and probably it would come to this, that we should indent for officers on other presidencies and provinces, and the same difficulties would occur; so that, looking at the whole question, I think perhaps the entire management should be left in the hands of the Public Works Department.

I think that the Public Works Department officers should, in all matters except those which relate to the actual execution of the work, correspond with or through the collector of the district. This was not done in the late scarcity.

The Public Works Department officers should select their works in consultation with the collector.

The collector should, of course, be mainly responsible for seeing that everyone does his duty, but if the entire management of the works, and the admission or rejection of applicants and their food, &c. are placed in the hands of the Public Works Department officers, they would resent interference. I therefore think that all Public Works Department officers in a district should, in a time of scarcity, be considered, in all except scientific matters, as assistants to the collector.

Mr. Robertson.—If a local officer believes distress to be temporary, and is not satisfied that the distress is indicative of approaching famine, he should,—

1st. Establish village to village inspection by appointed officers, so that all bad cases may be got at and sent to a relief camp, and those requiring labour sent to some public work not too near to their homes.

2nd. He should establish a relief camp under proper supervision, where all who are not fit to work, or are sick, can be fed and treated.

As the people at this relief camp become fit for work he should weed them out, and send them with tickets for employment to works.

People should in all cases be employed on works under the Public Works Department, and, as long as distress is only temporary, on ordinary works in progress.

As regards tests for admission, the district officer or famine officer can easily tell if a man is fit to work. When a man is at a relief camp his fitness will be decided by the local officer and the medical man in charge.

As soon as it is seen that distress is extended, and that ordinary works cannot provide sufficient employment, then special works should be opened.

Most certainly the works should be so arranged as to employ large numbers at one place in such case, and then only is proper work and proper supervision obtained. If the works are scattered, Government charity is sure to be misapplied; numbers who can maintain themselves, but who will not move to a distance from their villages, will by joining works near their homes obtain relief when they ought not to receive aid. There will and can be no proper supervision and organization at scattered works, and thus dreadful cases of distress may arise.

As a rule, all famine relief works should be under Public Works agency. Only the aged and those not physically able to work properly should be employed under Civil supervision.

In a district the executive engineer, either for roads or irrigation, is always in official relations with the collector; while again when famine works are in progress, the assistant executive engineer or other officer is in communication with the assistant collector. An order from Government that the district officers and public works officers are to work in cordial co-operation is all that is requisite.

The collector, advised by his district officers, will communicate to the Public Works Department officer the taluka or portion of a taluka where some relief work is required, and the Public Works officer will use his professional skill in selecting a work, or probably there may be plans ready for works in that locality. If any particular scheme should appear feasible to the district officer, the collector would bring it to the notice of the officer of the Public Works Department.

The responsibility that the works are being properly executed, and proper order, &c. maintained on the large works under the Public Works Department, will rest with the chief executive officer of the Public Works Department in the district, under the control of the superintending engineer of the circle. But the responsibility as regards the famine arrangements, and that all needful steps are being taken by all branches of the public service in a district (*i.e.*, collectorate), will most certainly rest with the collector, while each collector will in his turn be subordinate to the commissioner of the division, who is the next officer responsible to Government.

Mr. Wingate.—Small vs. large works.—(*a.*) *In the beginning of a famine*, it seems of the first importance to determine whether the district is threatened with a local scarcity or is a part of a larger area about to endure a widespread famine, and in the latter case, whether the district lies towards the edge or the centre of the affected tract. Once the famine area is defined on the map, a glance will show whether distress is limited to a particular locality or not; and if not, it should excite suspicion if a district well within the smitten tract professes to feel little strain, while an over-anxious officer on the outskirts might safely be re-assured.

If the scarcity is local there can be no question of large works, and as long as an extension of ordinary works on more or less modified principles may be expected to tide over the difficulty, I would leave each officer pretty free to pull his own district through its troubles.

And I would adopt the same policy, only with more organization, where the scarcity is widespread but not severe, *i.e.*, trusting to small works, but holding larger works in readiness, and here and there, as necessity arose, opening a larger work.

But if once convinced that a real famine was impending that would almost immediately involve operations on a larger scale, I think I should avoid small works. They seem scarcely necessary, for after a crop fails there is much movement of people, disturbance of prices and even panic, but there is no danger of any immediate mortality; while experience teaches us that if the civil officers begin a lot of works, they are so worried and busy that they neglect coming troubles and responsibilities; and if the Department Public Works officers are hustled into the field and crowds of workpeople collected before things are half ready, the professional officers are disgusted and harassed, the works badly laid out, the people idle and undisciplined, till a halt is called and the work has to be closed to applicants, just as a pinch is beginning, till order can be restored.

(*b.*) During wet weather, or towards the end of a famine, or when for any cause the people of any tract are much depressed, the aid of small works might be called in.

But for the main system of relief in severe famine, I believe large works the only economical system, for not only do they give a good return in the work done, but they economise supervision and keep down the numbers seeking relief.

I do not say that small works cannot be managed so as to secure a return in work, but from what I have seen, they either necessitate piece-work management which keeps off the weakly,* or if the weakly are admitted, scarcely any work at all is done; and supervision on an extravagant scale is needed to get work, protect the weakly, and keep off the non-necessitous.

On a large work the officers and people settle down and large numbers can be admitted and controlled without trouble; small works are continually changing, officers and people always harassed where they are to go next, while no officer can feel sure that somewhere or other things are not going wrong.

Most officers who advocate small works, also advocate, I notice, no tests, except that of a given piece of work to be done for a given sum of money. But those officers who know that in a severe famine more than half the population will be willing to work outside their houses for a couple of annas a day, while thousands really in want shrink from piece-work, will not be satisfied unless they have only the minimum number on relief, and that number comprises those most in distress. Anyone responsible both for economy and the condition of the general population will find large works his strength; and here and there, for special reasons, he can use small ones too. Department Public Works officers who urge small works would probably not feel inclined to be made responsible for the physical health of the district; and civil officers who do so, would dislike a strict account office and strict inspection.

Briefly, then, I would, in ordinary scarcities, when numbers seeking relief are moderate, depend on small works, supplemented by large ones, if necessary; but with real famine in view, I would turn the whole strength of my civil establishment towards accurately forecasting the calamity, and of my Department Public Works officers to making ready for very large numbers, and I would allow no small works or half measures at first, but depend wholly on large works, and as distress deepened or weather necessitated I might bring small to my aid, if necessary.

* Weakly people can only be admitted with a graduated scale of piece-work; to get this the people must be classed, and each class worked separately, to do this on numerous small works woud need an enormous establishment.

MADRAS.

Mr. Price.—I would, when distress appeared to me temporary, go on with ordinary works for which allotments had been made in Local Fund or Provincial Budgets, and I would not disturb the usual mode of supervising and directing these. I would at the same time, if this had not been (as it ought to be) done before, decide, with the chief officer of the Public Works Department, what larger works should, as famine measures, be taken up, and I would make preparations for setting about these if matters became worse. In the earlier stage of distress I would take on all applicants of the cooly class, making the sole test a proper day's work for the ordinary wages, and relentlessly cutting off a portion of these for short work. When it became clear, from increasing prices and demand for employment, the lapse of the cultivating season without sufficient rain, and the failure of crops on the ground, that a famine was inevitable, I would begin special works, and at that period I would prefer massing the people on a few localities at a reasonable distance from their homes, placing them under efficient Public Works Department supervision and exacting a full task. If matters became still worse, I should open smaller works nearer the homes of the people, but employ upon them only those who were weakly, leaving the larger works still occupied by the strong.

I am decidedly in favour of leaving all relief works, no matter of what kind, under the supervision of the Public Works Department. I have always been strongly opposed to placing anything but the most petty works, such as clearing silt out of drinking ponds and making small sanitary improvements around villages, under the superintendence of civil officers.

My reasons mainly are that the profession of an officer of the Public Works Department is the planning and superintendence of irrigational and other works; that the civil officers, as a rule, are totally ignorant of the way in which work should be done; that the officers of the Public Works Department are accustomed to measure up and account for work, which civil officers are not; and, lastly, that where a famine really occurs, a civil officer, even if he understood how to carry out any particular work, has so much of other matters to attend to, that he cannot give the necessary time to the supervision of work which, if it cannot be actually overlooked by a professional man, can be inspected and directed by him with more effect than by an amateur.

I know of no single argument in favour of placing relief works under the direction of civil officers. I speak from a comparison of the results in the Cuddapah District, in a portion of which the late Mr. Schoury undertook the entire care of some relief works and the supervision (charge remaining but nominally with the civil officers) of others. The out-turn and the quality of the work thus performed contrasted in a most remarkable way with those of work in other parts of the district which, owing to no fault of mine, was overlooked solely by civil officers. I consider that the chief district officer and the Public Works Department head of the district should, in consultation, settle all questions connected with undertaking special relief works. It should be the duty of the former to decide in what particular locality relief of this kind should be given, and to arrange through his subordinates for the supply of materials for camps, provisions, carriage, &c.; and when the work to be executed has been settled upon, to send to it the necessary coolies with rolls; and it should be the duty of the latter to be prepared with a sufficient list of works, to be able to state for what number of men, women, and children each one will provide employment, and for what period it will do so; and, finally, after discussing and settling with the collector which of these, as regards situation, nature of work, &c., is the most likely to afford efficient relief with the most chance of eventually the least loss to the State, to take it in hand, depending only upon the civil officers for his coolies and supplies. The responsibility that the needful steps as regards works are taken should, I think, be with the head of the district, the chief officer of the Public Works Department being responsible for the planning and execution of all works and the accounting for them.

Mr. J. G. Horsfall.—No special relief works need be opened. Ample employment could be found in ordinary works being carried on under the Public Works Department, Local Fund Boards, Municipalities, and Civil Officers. So far as possible the allotments of the year should be utilised and people readily admitted to the works upon piece or task-work. It would be sufficient in such a case if the superintending agency were strengthened, and regularity of payments ensured.

It is only when these works do not suffice to meet the crowds of applicants for works that special works should be opened, and these should at first be so arranged as to give employment to small bodies in the vicinity of their homes to which they would be able to revert at once upon the advent of a favourable monsoon. Abundant work of this kind can always be found in repairing or making village roads, repairing irrigation tanks, excavating or repairing drinking-water tanks and wells, reclamation of land covered with prickly pear, and the like. Of these only petty works requiring no engineering skill should be carried out under direct civil control, aided and supervised by the Public Works Department. The officers of the Department of Public Works are by education and training better qualified to superintend all works. They can estimate and see that the work done is adequate to the remuneration allowed. They have the advantage of being educated to carry out such works. It is only with regard to petty works such as clearing prickly pear, repairing village roads and village drinking-water tanks and wells, and such like that professional supervision is unnecessary and would prove too expensive. Such works as these can easily be carried out by the village officers, supervised by a Revenue inspector or clerk from the taluk cutcherry and checked by the Tahsildar and divisional officer, and occasionally by the district officer himself.

The selection of all works should rest with the collector and district engineer combined, except in the case of minor village works to be carried out under the superintendence of civil officers. These should be left solely to the discretion of the collector. When a sufficient number of works has been provided, the applicants for works should be passed by civil officers, leaving the execution of the works and their regulation as to task or piece-work entirely to the Public Works Department.

Works of public utility should invariably be selected, such as the improvement of water supply for irrigation or supply of drinking water; secondly, the improvement of communications, such as roads, railways, and canals. These works should be selected as far as possible near the centres of distress.

The responsibility of seeing that all needful steps are taken by all branches of the service should rest primarily upon the collector.

Mr. Sewell.—If the distress is expected to be merely temporary, applicants for relief should be first employed on the ordinary works which should be pushed on and extended as far as possible, I mean Local Fund roads, tank repairs, &c. Municipalities, as a rule, have so little money to spend on new works that they cannot do much in this way. Moreover, there are manifest objections to collecting large bodies of people in towns during seasons of distress. I do not think any test is required at this stage. Few will apply for work who do not really need it. If distress increases, it becomes necessary to open special works, and in the early stages I would rather

give employment to small numbers near their homes, than collect them in masses. Such works, *e.g.*, tank repairs, formation of village roads, clearing village sites from prickly pear, can, I think, be best looked after by civil officers. Public Works supervision is so costly that it is not worth while to expend it on small and scattered works. As famine extends, I would advocate large works placed under professional management, such works being of course selected by the civil and Public Works officers in concert. Irrigation works, which will be remunerative either directly or indirectly are the best to take up. In this district, as mentioned above, we are so well off for roads that I would not advocate anything extensive in that line. The collector, of course, is responsible for the general state of the district, while the district engineer has the actual control of such works. If these two officers do their works properly and pull together, I do not think any difficulty can arise in this matter.

Major Baynes.—(*a.*) The locality of the ordinary works in progress should be widely made known; payments on them should be made at least three times a week so as to meet, as far as possible, the wants of the classes already mentioned (p. 18). A staff should be organized for the prosecution of special works, so as to afford employment immediately an abnormal pressure arose on ordinary works in progress; and, if local traders were keeping up fictitious prices by combination, I should import grain from places where it was more abundant and selling at a cheaper rate; and thus lower prices by selling to the coolies grain brought by myself; because to increase the rate of wage to meet unnecessarily high prices of food is simply to throw money into the hands of the traders at the public expense; and the water supply should be most carefully watched and maintained by cleaning out old or sinking new wells on petty contracts.

(*b.*) As long as the ordinary works in progress sufficed to meet the demand, I should leave them in *statu quo.*

(*c.*) I would apply no further test than the simple request for employment on task or piece-works; it may be assumed as a fact that the agricultural and urban population are only driven by necessity to abandon their usual avocations and their homes to seek employment on a Government work on which an outturn equivalent with the wage is demanded.

(*d.*) Immediately ordinary works in progress cannot meet the demand for employment, but all the working plans, specifications, and estimates connected with such works should be prepared and kept ready for this emergency, because, when the pressure of famine begins to act, the effect is awfully rapid; in a few days hundreds become thousands, and before labor can be supplied to those seeking it, they become physically incapable, and then the demoralisation of the laboring classes sets in with a force which cannot be subsequently stemmed; this could be prevented by having the plans and estimates of special works for every taluk prepared beforehand and kept in the collector's office to be taken up on an emergency, and, if the necessary augmentation of staff for supervision of them was made as soon as there was indication of an abnormal pressure on ordinary works, there would be no delay in opening them. The absence of this preparation was the chief cause of the disorganisation in my taluk.

(*e.*) I would divide the affected taluks into circles having a radius of ten miles, and in the centre of each I would have a special work of Class I, so as to avoid the collection of coolies in unwieldy masses; the results of so doing have been shown to be imperfect supervision, delay in measurements, and consequent irregularity in payment of wages; sickness resultant on insufficient or over-crowded accommodation and scanty supply of water; death caused by want of medical treatment; epidemic disease generated by imperfect sanitation; for, however good the sanitary scheme may be, the attempt to obtain a voluntary submission to its rules from a mass of undisciplined people whose habits are filthy will prove futile, and a compulsory observance of them will necessitate so large a cost on the sanitary staff that it would be very disproportionate from the result obtained and from the sum paid as wages to the coolies for whom it has been formed. Moreover, this question involves that of the distance test which is discussed in Chapter III.

(*f.*) At the same time, I would strongly oppose the opening of numerous petty works under Civil Agency —such as were styled "village site improvements, eradication of prickly pear;"—at all events, till all other special works were exhausted; because they can neither be efficiently supervised on account of their number, nor can they permanently supply the amount of relief required during a season of distress; moreover, they utterly unfit the ryot for employment on special works of a legitimate character, for, when he has been morally demoralised and physically weakened by being paid a bare subsistence for the eradication of prickly pear at his doorway or for digging a hole in his village pond, it is impossible to get him away from his village to do fair work on increased pay.

I would divide special works into two classes. The first would include road construction and all irrigation works; in every circle I would have one work of this class which I would style Class I. The second would comprise repair of existing roads, collection and breakage of metal on them and on roads under Class I, which I should style Class II, and I would not require labourers to come to works of this class from a distance greater than three miles.

To Class I, I should attach—

Men and married women up to forty-five years.
Unmarried women from twenty to forty-five years.
Lads and girls from twelve to fifteen years.

Marriageable girls between fifteen and twenty and children over ten years would be attached to this class if accompanied by their parents or near relatives; and, if marriageable girls though unprotected, desired admission to it, I should not refuse them. I should not separate a husband from a sick wife or *vice versâ*, nor a parent from a sick child; in such cases I should temporarily employ the able-bodied relative on Class II.

To Class II, I should relegate adults between forty-five and fifty-five years, nursing mothers, and women in advanced stages of pregnancy, marriageable girls between fifteen and twenty, and children between ten and twelve years if they had not an adult relative in Class I whom they desired to accompany.

The persons attached to these classes should be able to do seven-five per cent. of the ordinary out-turn of an able-bodied laborer of each class. I am strongly opposed to the employment of children under ten years of age, and would as strongly advocate the gratuitous supply of cooked food to all below ten years who are eligible for relief, either in their village kitchen or in the camp attached to the work on which their parents were employed; the former plan is the best for many reasons; the cost of so doing very slightly exceeds that of employing them, but the results of the two systems are very different. Children of this tender age, if worked all day for a continuance, become prematurely old and do not thrive on any amount of food; they want less work and more play; during the famine, children over *seven* years were *compelled* to earn their bread by *working* from 7 a.m. to 5 p.m.; very few children of this age could stand this exertion even for a few days, and I did not carry out this order in consequence of the injurious effect it would have had on the "rising generation."

(*g.*) Under civil supervision, as far as classification of laborers, issue of pay, sanitary and medical arrangements, supply of food, and the general welfare of the labourers and their children are concerned. The interference of the Public Works Department should be confined to matters purely professional and to measurements of work done (see paragraph XVII *b*, Chapter III., section I).

CH. II. Q. 6.

MADRAS.

(*h.*) In stating my reasons for placing the unprofessional branch of the administration of relief works under the Civil Agency, I must premise that my remarks apply only to my own taluk, and are the result of my limited experience; and that I only desire to comment on a system as it presented itself to me, not on individual officers of the Public Works Department. It is true that this department did not take any active part in relief operations in my taluk till September 1877, but in March 1878, it was unable to make regular payments, and coolies were starving on some works because wages were in arrears as much as three weeks.

Generally speaking, I consider that the welfare of the relief coolies and their families was held a secondary object to the attainment of professional interests and the maintenance of departmental routine; nor, if this be the fact, is it one to create surprise, because the European officers of the Public Works Department are never brought into *direct* contact with the coolies employed on their works, they deal with contractors through their overseer; and make only large payments on carefully-checked completion certificates; they are not as a body conversant with the language, feelings, or capabilities of the coolies, and the professional habits and training acquired by them under a systematic discipline cannot be broken through without a total disorganisation of the department; and my experience goes to show that the department is not *naturally* constituted to act as a relief agency, that it is not sufficiently *elastic* to become so with sufficient rapidity, and that its officers, high and low alike, never realised the fact that the *primary* object of a relief work is to *save life*, and not to sacrifice it to the maintenance of departmental rules and systems of accounts.

(*i.*) I would leave the selection and time of commencement of special works, previously sanctioned for an emergency, to be determined by the collector of the district, who should intimate his wishes on these points to the district engineer in sufficient anticipation of their being actually required, to allow of that officer making his departmental arrangements for supervision of professional details and for securing regular measurement of the tasks performed by the gangs.

(*k.*) By the district engineer subject to the condition of distance mentioned in sections *e*, *f*, of this paragraph, and on a request from the collector, he should be empowered to extend those or open others in anticipation of sanction, supposing the necessity arose for providing more labor than was originally estimated as requisite.

(*l.*) On the collector and the district engineer; the former would be responsible for all relief details, the latter simply for the correct prosecution of the work and submission of measurements. Payment of wages on pay sheets passed by the Public Works Department should be made by the Civil Agency.

MYSORE.

MYSORE.

Colonel Sankey.—To the inquiry, under what tests the applicants should be admitted, I can only reply by opening up the whole subject of tests, which at this initiatory stage seems to me as applicable as at any other. After what I have already written, I can only submit my opinion that all the test required is, that persons looking for State aid should be required to work at piece-work rates, suited to the ruling price of grain, and to their individual capacities; and that all artificial tests are not only needless, but likely in most cases to be mischievous, causing both loss to the State, and needless suffering, if not death, to the distressed individuals.

With the utmost respect for the humane motives which have unquestionably underlain the system adopted, for instance, in dealing with the Mysore famine since the introduction of the new *régime* in September 1877, it seems to me to have partaken far too largely of an artificial character. Among such arrangements I would include the following:—

(1.) That the applicant should travel ten miles from his home.

(2.) That he or she should reside* in a relief camp and submit to its discipline.

(3.) That no "well-to-do" labourer should be provided with any work by Government (see Section III. page 9, of *printed Collection*).

(4.) That no labourer should be encouraged, by any prospect of additional pay, to do more than his task.

(5.) That only a bare subsistence should be provided for those seeking relief.

(6.) That the State, instead of the parent, should support non-working members of families and infants.

(7.) That nominal rolls should be made out daily on relief works, showing name, caste, and residence of each applicant.

(8.) That such rolls should be called over daily before work commences (see Famine Code).

(9.) That pay should be disbursed, and tasks set-out and measured up, daily, &c.

To these principles, as laid down stringently in the Mysore Famine Code or in departmental orders, I would add the following lessons which Sir Richard Temple has laid down as the result of his experience, but which nevertheless appear to me equally artificial and unsuitable in their character, *viz.*—

"To prohibit absolutely, in the beginning of distress, the opening of petty works under Civil Officers, of non-professional establishments, among the villages close to the homes of the people.

"To refuse relief to strong, able-bodied persons of both sexes, in any form, who have employment on large public works.

"To allow petty village-works to be opened only where severe and widespread distress has declared itself at a comparatively advanced stage in any district or part of a district; and even then to reject all, save those who cannot reasonably be expected to proceed to the large public works, &c.

"To insist upon a systematic inspection by responsible Civil Officers of all relief gangs, person by person, and from time to time, in order to see whether they are all in need of or deserving of State assistance, and to note whether their physical condition improves or deteriorates.

"To reject every applicant for, or recipient of, relief, whether on a public work or on other works, who can be shown to be able to support himself for a time without State assistance.

"To keep wages on relief works at the lowest rate compatible with the health of the labourers; this being necessary not only in the interests of economy, but also to prevent demoralisation of the people."

In reference to these, I shall only add some brief observations to what I have already advanced on the subject of tasks, distance test, and bare subsistence allowance.

As regards the first, I find, in a memorandum by Mr. Elliott, of 12th February 1878, that he saw fit, in dealing with the work of Sergeant Heinig's (Mullapa Chetti) tank, to substitute piece-work for tasks; observing—

"Accordingly, Mr. Target and I came to this conclusion, that only two rates should exist—piece-work and the old B scale (*i.e.*, two annas for men and one and a half anna for women); that every woman should have the chance of getting piece-work rates; and that no one should be put in B pay unless he or

* This may be very essential, however, in dealing with professional beggars and waifs and strays generally.

she, being able-bodied and fit to be put in the A class, refuse piece-work."

Again, in regard to the Chick-Hoscotta series, Mr. Elliott observes—

"I think that every effort should be made to get the people on to piece-work."

The distance (that of ten miles) was also apparently discarded after sufficient trial; but the same Famine Proceedings from which I have quoted above show that the Commissioner was not prepared to abandon this entirely; and such being the case, I will now quote from his memorandum on the Kolar district, dated 10th February 1878, having reference to the point:—

". . . . So much for the villages; in the towns there is not so much employment to be had . . . . I am satisfied that the time has come when we ought to open a relief work near each of the large towns.

. . . . "If possible, it should not be so far from the town as to entail the necessity for hutting the labourers, nor so near as to be quite at their doors; the best position would be two or three miles off, so as to force them to shew their need of relief *by taking a good long walk in addition to their daily task.*"

Walking being only one of many ways of expending vital force, I must confess myself entirely at a loss to understand why the three hours thus proposed to be employed in going to and in returning from work should not be turned to the profit of Government by having the work as close to the doors of the people as might be conveniently feasible. As it stands, the proposal seems to me to insure deliberate waste for no conceivable object, as it is clear that a corresponding addition to the task near home would equally test the sincerity of the applicants.

In reference to the "bare subsistence" of which so much has been said and written, I confess it is to my mind quite as untenable as the other tests.

The *first* objection to it is, that, being insufficient for the support of a working labourer, Government cannot get an adequate return for the wage given, it is therefore uneconomical; the *second*, that disbursed as the wage or its equivalent may be, for the use solely of the individual recipient, it interferes with the universal law of providing for offspring, and with the almost equally strong native custom of providing for poor relations, caste brethen, and hangers-on; and the *third*, that its inevitable tendency is to underfeed the children, and thus undermine the physique of the rising generation.

The latest ruling on the subject of this "bare, subsistence" allowance, as applied in the North-Western Provinces, appears for an adult to provide as follows:—

10	chittacks of	wheat-flour,
2	„	dâl,
$\frac{1}{4}$	„	salt,
$1\frac{1}{2}$	seers	firewood,

and is, therefore, an improvement on the 1 lb. meal previously prescribed by Government.

Writing in 1874, Sir Richard Temple observed that the rate, as proposed by himself—

"$\frac{3}{4}$ of a seer, or about $1\frac{1}{2}$ lbs., per head for men, women, and children, at which grain should be provided, was assumed after due consideration and discussion. The lowest diet provided in Bengal jails for non-labouring persons is equal about 1 seer, or 2 lbs. The ordinary diet of a labouring adult in Bengal is taken, after statistical inquiry, to be 1 seer of rice, $\frac{1}{4}$ seer of fish, pulse, pep or other condiments."

The ordinary daily meal for a cultivating ryot in Mysore falls little short of two seers (over 4 lbs.) of *ragi*, which is understood to be even a more sustaining grain than rice; and although Sir Richard Temple and other officers supported, in dealing with Madras and Mysore, the sufficiency of a meal not more than one-quarter of this, I can safely say that, in the opinion of all Medical and Civil Officers with whom I have come in contact, and who had the best means of forming an opinion on this subject in Mysore, this average quantity (1 lb. of grain) was held to be wholly inadequate for labourers in work; and that the inevitable tendency of such diminished feeding would be to lower the assimilative powers till the patient became after a certain time incapable of digestion. The feeding would, in fact, be not only ineffective, but dangerous if persisted in for any length of time.*

But the worst feature of the "bare subsistence" allowance is its baneful effect on the rising generation. If famine be only of short duration, under-feeding the adult population may possibly not inflict on them any very lasting injury; but, surely, no one will contend that such will not interfere with the proper development of children; and if continued beyond a certain point, that it will not inflict injuries which cannot be effaced for several generations, if even then.

The "bare subsistence" diet given to children must, I submit, have this inevitable effect, even when a responsible famine official is able to see with his own eyes that each child actually swallows what is thus doled out; but if he is unable to give this guarantee, what may it be supposed is the practical result? It is this: the child gets little or nothing to eat. Hunger overcomes every instinct except that of self-preservation; and in Mysore I have seen the most glaring examples of parents, when thus pressed, having deprived their own offspring of food. I have seen hundreds of women carrying on their hips living skeletons of children which they had brought to this stage, while satisfying their own wants. On this point I would appeal to Mr. L. Ricketts, the intelligent Deputy Commissioner of the Bangalore District. I feel assured, from all I have seen and heard on this subject, that I shall be supported in this opinion by the great majority of the Civil, Public Works, and Medical Officers who have served from the first through the Mysore famine.†

A writer in a well-known newspaper lately defended the "bare subsistence" wage, observing that—

"By raising the ordinary wages, and paying in the ordinary way when prices are at famine rates, the State runs the risk of not providing for women and children; while to bachelors it would be paying much more than is necessary."

Strange infatuation! It is alone by piece-work, and the facility the system affords for adjusting rates to any phase of the market, that women, children, and non-working members of families can be properly sustained; while the contrary, as I have shown, is the inevitable result of the task system, combined with the "bare subsistence" wage. And as to the argument based on *bachelors* getting more than necessary, I need hardly say such ornaments of native society are practically unknown, in Southern India at least. If a man have no wife he is certain to have a substantial equivalent, and in any case hangers-on, for whom he must provide. In fact, while it is next to impossible, by any rigid system for distributing by measure through any State Establishment, to dole out the precise amount of sustenance required by every individual during famine, and insure economy in the operation, both ends are met in the most complete manner by the natural distribution which takes place through the system of payment by results. *The able-bodied labourer is, and must always*

* In the *Army Medical Report* for 1876 I find the following, page 223: "Sir Richard Temple assumed that it was possible to feed the people on a smaller amount than was given in the Bengal Famine, and accordingly only 1 lb. of grain was given instead of $1\frac{1}{2}$ lbs., besides half an anna for the purchase of condiments. This amount was barely sufficient to maintain life in a state of rest, but was utterly inadequate for even a moderate amount of labour. The result was that, task-work being demanded of those people, they perished by thousands."

† Evidence of the same character may be had from Sir Charles Trevelyan's article in the *Quarterly Review* on the "Irish Crisis," in which it is observed: "The relief work did not always furnish a subsistence even for those who were employed on them. The wages, paid regularly in money, were higher than any which had ever been given for agricultural labour in Ireland; but, at the existing prices of food, they were insufficient for the support of a family, melancholy proof of which was afforded by daily instances of starvation in connection with the relief-works."

II. Qs. 6. MYSORE.

remain, during famine, as in ordinary times, the natural distributor and economiser of wages. In the endeavour to perform artificially the same operation, hosts of minor, and therefore of untrustworthy, agents have to be employed; and no matter what the vigilance exercised by the superior officers, misappropriation must occur, leaving the objects in view unfulfilled. More money will, as a matter of necessity, be spent by the State, and less food reach the stomachs of the people. Without the least desire to dogmatise, I confess I cannot but feel that the "bare subsistence" wage is uneconomical, useless, and most cruel in its effects, on the rising generation especially.

Mysore, and probably the whole of the southern portion of the Peninsula, under the tank system, furnished an infinity of small works of the most useful character, the earth-work of which is capable of being dealt with by village *potails* under even non-professional supervision. These, taken with the enormous amount of small sanitary work calling for attention, *viz.*, rectification of bad drainage, filling-in unwholesome pits, levelling old mud forts and filling-in their ditches, clearing jungle, digging wells for the improvement of water supply, planting belts of trees to ward off unwholesome winds, &c.—that, taken in conjunction with such a three or four years' programme of Public Works as I propose, the field of selection, both of large and small works, would be amply wide to meet even the worst contingency of famine. When such, however, occurs, the actual selection must, I think, be left to the Local Government or Administration, unhampered by rules which may or may not be applicable to the particular circumstances of the locality, or of the form in which distress manifests itself.

As regards engineering works, particularly those of an ambitious character, I need say nothing: they will probably more than take care of themselves the moment the policy of Government is promulgated, especially if the present surplus Public Works establishment be utilised for the purpose.

To the concluding question, on whom should the responsibility rest in the district for seeing that all needful steps are taken by the several branches of the public service concerned, I think that the same reply may be given, *viz.*, on the Head of the Local Government, once the Government of India has authoritatively recognised in any province the necessity for exceptional measures.

And at this point I trust it may not be deemed out of place if I venture to offer some observations regarding the employment of special agency in the conduct of a famine campaign, under the direction of an officer armed with unusual powers, such as a Famine Commissioner, to whose advice the head of the Local Government is bound to attend, and who, so far as concerns all famine matters, is for the time being practically a dictator.*

It does not follow, because some such appointment for regulating matters in an entire province is found necessary, that therefore unity of action can only be secured by making a corresponding arrangement for each division or district, or *vice versâ;* still it appears to me that there are strong reasons for considering that the sudden change from ordinary routine thus involved would be as generally inadvisable as to carry out a change of commands and tactics with an army when standing in face of the enemy.

To decide on the success of the measure from the particular case of Bombay in the conduct of the late famine would, I submit, be fallacious. Unquestioned advantages of a certain kind resulted from the sudden administrative change there made at the commencement of the distress; but these were apparently for the most part due to certain personal elements most happily combining at the proper moment for the public good; also to the following facts:—(1) the famine neither in intensity nor duration was comparable to that* experienced in Mysore, or in many parts of Madras; (2) only a comparatively small portion† of the lesser ryots and subordinate cultivators were apparently affected, and relief was required chiefly for classes who could conveniently be gathered in large camps; and (3), whereas the civil officers soon ran out of small works, the Public Works Department had large schemes on which the Local Government was most anxious to have favourable opportunity for commencing.

The financial value of the works commenced in contravention of the previously expressed orders of the Government of India (see page 6 of my *printed collection*) remains to be ascertained, and their cost, past and future, gauged, before a safe conclusion can be arrived at regarding the measure of success attained in Bombay.

But his Excellency the Viceroy has, in paragraph 24 of his minute No. 131 of the 12th August 1877, pointed to a source of weakness in such special appointments which cannot be overlooked. He observes in reference to the appointments of Major-General Kennedy—

"Of course, however, this arrangement might have been as injurious as it proved beneficial, had the officer selected, on whom the results of it depended, been deficient in experience, judgment, or energy."

It is sufficient matter of notoriety that ever since the formation of the Department the relations of the Public Works with the Civil Department have been more or less strained (to a greater decree, probably, in Southern than in Northern India); and if the course followed in Bombay were adopted as the rule for the future, it is to be feared a legacy of ill-feeling would be engendered which could not fail to be very detrimental to the public service in future.

If the Head of the Local Government have not the requisite force of character to counteract a tendency towards virtual supersession, in such a case, by his own Chief Engineer, the position would clearly be highly objectionable; but, on the other hand, if both be men of strong will, and imbued with different ideas regarding the plan of action for meeting the famine, a fatal weakness would be the result of their conflict of opinion.

Again, the appointment of a Civil Officer who, as Famine Commissioner, would stand between the Head of the Local Government and the Chief Engineer, would, I venture to consider, be still more objectionable, and particularly so if he be a stranger to the province.

In this latter case, with the urgent demands of famine pressing on his every moment's attention, such an officer could have no time to master the local facts sufficiently for forming safe conclusions; and as, from the very circumstance of his special selection for the post, he would probably be a man of distinguished ability and strong will, he would for this reason hold to, and defend with tenacity, the plan of campaign which, whether really well or ill devised, commended itself to his judgment.

A plan thus, of necessity, hastily improvised could not reasonably be expected to accommodate itself to all the complicated circumstances and requirements of a province suffering under famine, when, as

* As this is apparently a strong term, I beg, in order to avoid misapprehension, to quote the terms under which, for instance, the Famine Commission of Mysore acted, and from which I have drawn this conclusion. In Government of India letter to Chief Commissioner of Mysore, No. 821 of 8th September 1877, it is observed that "he should have authority, when "travelling in the interior, to give instructions in your (the "Chief Commissioner's) name to the local officers;" and in circulating this, the Chief Commissioner directed (on 16th September) that "all written, or, in minor matters of detail, "verbal, instructions, which may be given by that officer (the "Famine Commissioner) direct to the Deputy Commissioners "should be promptly carried out."

* In only two places, Belgaum and Dharwar, was grain as high as 9 lbs. per rupee in August; and only one place, Kaladgi, in September 1877, in which latter month the famine may be said to have ceased. For corresponding prices in Mysore, see footnote to my *printed Collection*, page 3.

† See paragraph 17 of Sir R. Temple's Famine Minute of 24th December 1877.

we know, the whole fabric of society verges towards dissolution, and would almost certainly be in many respects quite mistaken. The very ability and character of the selected officer would necessarily aggravate the evil, and crotchets of the most mischievous kind might easily take the place of a sound and intelligent treatment of the disease.

It thus appears to me that, in the management of famines for the future, the aim should be to pass into the new conditions required with the least possible dislocation of the existing machinery of Government; by, in fact, a simple process of expansion.

Major Scott Moncrieff.—The first measure to be adopted as long as it is doubtful whether famine is approaching or not is for the district officer to obtain a relaxation of budget rules both as regards Imperial and local works. The first effort must be to give full employment to the able-bodied. Repairs to roads, canals, &c. should be pressed on, and if these are not enough, and there are no sanctioned new works in progress in the district, additional ones should be started, which it is to be presumed will have been prepared against this contingency. There should be no test save willingness to work, no special relief arrangements. At this stage it is enough to pay rigorously according to work done, but there ought to be plenty of work, and no man willing to do his day's task should be turned off because he does not look in want. A few large works are unquestionably better for supervision than many small ones, but if the people will not resort to them, works must be found to which they will resort. At this stage if the Public Works Department can take in hand the supervision of the works it is better. Their organization is in every way superior to that at the command of the civil officers, and it is not till later than this that mischief is likely to occur from the Public Works officer insisting on a standard or rate of work incompatible with relief to the starving. The executive engineer and the officer in charge of the district should be in the closest friendly communication. If they will not work together, one or the other should go. The Public Works officer must select those works on which he can employ the greatest amount of unskilled labour with the least expenditure of supervision and of materials, and his works must be as near as can be to the centre of distress. Earth work is the best form. The collector or deputy commissioner must be responsible for seeing that in his district all is done which ought to be done.

Mr. Ricketts.—Even if I believed the distress to be but temporary, I would not advocate employment of applicants for work on ordinary works in progress, as there would be existing labourers on such works, and many of whom ordinarily maintain themselves and families by such works. Besides the assumption that it was only temporary distress would in part be based on existing facts, one of which would be the existence of such works and their power to provide for a certain number of then working people. I would therefore in the state of facts under consideration consider it desirable to open special works, the test being comparative poverty and task work, the works should be spread over many places so as to employ smaller bodies and in the vicinity of their homes; and such works should be under civil supervision, except in localities where the services of Public Works Department officers are available. Large numbers of work people on one work are standing menaces in a sanitary point of view and invite cholera visitation which is spread far and wide as the large numbers disperse to their various homes. Large numbers are more difficult of control and payment. A large work with the cessation of temporary distress might be left unfinished, which would scarcely be the case with a smaller one. The little work is often much needed, and working near their homes preserves domesticity and morality. In the civil branch there are more subordinates than in the Public Works Department, and they know the people better. Otherwise I should say the Public Works Department was the best agency. The district officer and his assistants must personally work and confer with the executive engineer and his assistants. The work might be selected by the Public Works Department in previous concert with the district officer, who, as a rule, could readily name numerous projects, all useful, and many of them both necessary and remunerative; and in case of difference of opinion the commissioner and superintending engineer should settle the point. I think the responsibility for seeing that all needful steps are taken by all branches of the public service concerned should rest on the district officer.

Colonel Johnson.—When distress has declared itself, and it has been decided that relief is necessary, works in progress in the distressed locality should be thrown open to all applicants, whether the works are under provincial or local officers, the Public Works Department or municipalities. The only test desirable is that the people employed shall receive payment only for the amount of work they turn out. The rates may, if necessary, be raised so as to permit of the people earning sufficient to support themselves under the increased prices of food; and if this be done carefully there is no probability of anyone resorting to the works who is not obliged to do so for self-support. It is above all things necessary to induce the people to flock to the works at the commencement of famine, so as to keep up their strength and condition, and not only theirs but that of their families also. The piece-work test allows of this being done, and of entire families being employed, excites a spirit of emulation amongst the people, preserves their independence, insures Government getting full value for its expenditure, and is less trouble to all parties than any other system. Anything in the shape of bare subsistence rates, except for confirmed malingerers (who should never be allowed near able-bodied works), cannot be too strongly deprecated.

It is desirable to open special works, first, where there are no works in progress within a convenient distance of the distressed locality; 2nd, when some of the people are unable to do sufficient work at ordinary rates to earn enough to support themselves.

It is inadvisable that incapables should be worked with able-bodied labourers, and they are best employed on distinct works, or if the works are large enough, at a distance from other labourers.

As regards the distance the works should be from the distressed locality, the nearer they are the better, but if there are suitable works within 20 miles, it is in my opinion quite unnecessary to open fresh works for able-bodied labourers. In case of rain falling they can get back to their fields easily from such a distance in a few hours. In case of there being no likelihood of their being suddenly required at their villages, they might be expected to go 40 or 50 miles for work.

The numbers that may be employed together should I think be mainly regulated by the works available, and will be commented on when answering question regarding large and small works.

All works for able-bodied labourers should be under Public Works officers, if available. Works for incapables may also be placed under Public Works officers, if available; but this is not likely to be the case, and a Public Works officer is thrown away in looking after people that can do no work, when there is abundance of work to be supervised elsewhere. Incapables and people who will not work require special provision:—medical skill to attend to the sick, magisterial powers to deal with malingerers, skulkers, &c.,—there is no object in saddling a Public Works officer with these duties. They may be better performed by revenue, judicial, medical, or other officers specially appointed for the purpose, the more so, as in case of general distress a number of extra officers having to be appointed, they may be specially selected for such duties. Neither is any useful object gained by working incapables with able-bodied. I have no doubt whatever that lakhs upon lakhs of rupees have been thrown

Ch. II. Qn. 6. Mysore.

away during the late famine, simply from neglect of the apparently self-evident necessity of keeping these classes distinct.

There does not seem to be any necessity for further provision to place Public Works officers in communication with district officers than already exist.

In the selection of works for relief, Public Works officers should be guided: 1st, by the utility of the work. 2nd. By its situation with reference to the distressed locality. 3rd. By the suitability of the bulk of the work to be done to the people who are to carry it out. 4th. By the sanitary condition of the site of the work and means of obtaining supplies, water, &c. 5th. By the state of health of the people. If cholera or other similar epidemics are prevalent it will be inadvisable to collect people in large gangs, and small detached works would probably be more suitable.

The responsibility for seeing that all needful steps are taken in a district should of course rest on the district revenue officer. It appears to me that during a famine, much more than at any other time, it is advisable that the management of a district should be left in the hands of the officers that know most about it. The number of officers may be increased to any extent desirable, and inefficient men replaced by efficient; but the normal machinery of Government should on no account be disturbed.

Ch. II Qn 7.

Question 7.—Poorhouse Relief without Labour Test.

Under what circumstances should poorhouses be opened to give relief without a labour test? Are there any other practical ways of affording relief at this stage, except through private charity?

Punjab.—7 officers have answered. Opinions not unanimous, but chiefly that poorhouses must be opened when required for beggars and infirm poor without test if applicants unable to work.

North-Western Provinces.—28 officers have answered. The majority of opinions corresponds with those of the Bombay officers.

Bengal.—16 officers answered. Poorhouses are necessary when beggars and wanderers increase, and no labour test should be applied, as the inmates should be unable to work. Cooked food to be given.

Bombay.—13 officers have answered the question. The majority think that when there are numerous destitute persons who cannot work, poorhouses must be opened for relief without labour test. No other plan is suggested.

Madras.—26 European and 4 Native gentlemen have furnished replies to this question.

The general opinion is that it is unnecessary to open poorhouses and camps for gratuitous relief at the earlier stage of famine, especially if at the commencement employment on sufficient wages is provided for the able-bodied, which will not only prevent them deteriorating in physique and coming on gratuitous relief themselves, but will enable them to maintain as usual those members of their family who are incapable of working, and who would otherwise have to be supported by the State. The stage succeeding that which calls for special relief works is considered to be the time when poorhouses should be established for the relief of those who are unfit to work, and from whom, therefore, it would be absurd to demand a labour test. This need not prevent the inmates being employed on light work in and about the camp, when they are able to do it. To supplement this form of relief, house-to-house visitation, and the distribution at their homes of money and grain doles to persons whose social customs or physical infirmities preclude them resorting to relief camps is suggested. Another suggestion is that village kitchens are more effectual as a means of relief than the congregation of large bodies of paupers in poorhouses.

Punjab.

PUNJAB.

Muhammad Hayat Khan.—Poorhouses should be opened only when the distress assumes a gloomier aspect, and the people are driven from home by hunger. Such persons should be admitted into them as cannot, on account of old age or infirmity, work. They should not only be provided with food, but should also be housed and clothed. These poorhouses may be supported from three sources: (1) Imperial funds; (2) subscriptions raised from private individuals; (3) district and municipal funds.

Colonel Parsons.—(*a.*) Gratuitous relief is admissible when the proportion of incapables has increased to an extent that renders it unreasonable and inexpedient that they should continue to be a burden on the miscellaneous charity of the community. (*b.*) In aid of private charity a grant from the district funds disbursed under district supervision is a practical and appropriate mode of affording relief.

Mr. Coldstream.—The experience of distress I have had convinces me that gratuitous relief is *desirable* as soon as works for the relief of distress are necessary. But to the introduction of gratuitous relief by a special agency and at new centres *at this early stage*, there are insuperable objections. It is disproportionately expensive, for it requires careful and complete organization and superintendence.*

But much good may be done, *i.e.*, lives may be saved, by putting small sums of money at the disposal of selected *Zaildárs* and *Lambardárs*, and holding them responsible that deaths from sheer want are prevented in their villages and circles. Now that a famine fund is at the disposal of Government, I recommend that this plan be adopted in cases where the necessity for relief at home has not yet become quite clear.

Mr. Roberts.—A labour test is desirable in all cases of poorhouse relief, and is essential except for people absolutely incapable of any kind of light labour; but most of the recipients of relief are hardly able to crawl to and from the distributing house, much less to work. At first, however, many professional beggars

* This illustrates *the* great danger of the British rule. It is better to let children fall sometimes when trying to walk than always to hold their hand. It is better to allow a few accidents arising from children running about than always to send out a nurse or tutor with them to keep them out of mischief.

See the remarks on the effect of Government by a bureau in *Mill* on "Liberty." Would that all Indian administrators took heed to his warning.—A.B

obtained admittance, able to work but unwilling, and the introduction of a rule requiring them to grind corn for their own use, reduced the number at the Gurgaon poorhouse in one day from 120 to 40.

Mr. Nicholl.—Poorhouses should be opened to give relief to the blind, the infirm, and those people who are, from whatever cause, unable to work.

Poorhouses and private charity for these people are sufficient at this stage.

Mr. Benton.—I think that during the earliest stages of distress poorhouses are not required. I have never seen the poor and infirm abandoned by their richer relations; and although mendicants may perhaps not obtain alms so readily from those who formerly supported them, what they receive may perhaps be supplemented by the charity of others, who may open their hands in consequence of severity of the season. Moreover, if they should be on shorter rations for a time, no damage would probably be done, and their case is not likely to continue long concealed from the authorities, whatever may become of others.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. W. C. Plowden.—If I was proceeding to attempt to organise private charity in a time of great temporary distress in a district with which I was familiar, I should proceed somewhat in the following manner:—

I should first obtain, from the best sources available to me, a list of the persons who were in the habit of distributing either food or alms, and should endeavour to ascertain what were the sums of money expended annually by such charitably-minded persons. Having done so, I should call a meeting of all the influential men in the town or locality to which the operations of relief were to be confined. I should be careful to secure the presence of the persons on the list I had already obtained, and I should endeavour in previous personal communication with them to induce them to double their ordinary subscriptions or to go even higher. What one wants in such a case is to work upon those who give only as a matter of ostentation; the really charitable will give any way, and if the ostentatious find their less wealthy neighbours are giving freely, they also will put their hands deeper into their pockets.

I will suppose, then, that the public meeting has resulted in a fair contribution from the people; the next thing is to organise its distribution, and to arrange by whom the distribution is to be effected. As far as possible, I should leave it to the more influential men of the locality to supervise the distribution. Those who should receive charity should be divided into two classes—those who might be relieved in a poorhouse and those who should be relieved at their own houses.

Some slight task should be assigned to each person relieved, whether relieved at their houses or in the poorhouse. The latter should not be allowed to leave the poorhouse.

Mr. Sells.—Poorhouses would, in my opinion, be invariably necessary in any time of severe distress independently of any labour test. There are always a number of blind, halt, lame, and sickly people, who could not possibly turn out any work worthy of the name, and the requiring of work from whom would simply be equivalent to utter waste of material. Relief to such must, I am of opinion, be positively gratuitous.

Mr. Tracy.—A poorhouse or hospital should be opened at an early stage of the distress for the sickly and infirm, for lepers, cripples, and travellers exhausted by privation. I do not know of any other way in which relief can be given at this stage.

Mr. Mellor.—When works are opened in several places in the district, I think the plan of having a nursery attached to each work, and allowing those who come for relief and are physically incapable of work to be fed thereat without exacting any task is a good one. These persons will for the most part have relatives at work and will leave with their relatives, and go home when the temporary distress is over. Having large central poorhouses and making all the incapables congregate there separates them too much from their relations, on whom they have hitherto depended for support. Natives of this country as a rule are willing to support their old and infirm relations if they can, and it is a pity to do anything which would tend to weaken this feeling.

Mr. Kennedy.—Poorhouses are entered by the lowest and most destitute of the population. They are requisite at an early stage if public relief works are not opened. Last year the district poorhouse was opened in October simultaneously with the relief works under the district engineer. The people were by this time unable either physically or mentally to do the work which the district engineer demanded, and were sufficiently infirm to be admitted into the poorhouse. The consequence was that the poorhouse, notwithstanding the prejudices of the poorest class, continued to be much more crowded than the relief works. This year relief works were provided when the poor had exhausted their gleanings from the rabi harvest. They have consequently been much better attended than last year, while it has been sufficient for all needs to enlarge the municipal poorhouse and to establish a pauper infirmary. We have therefore had an opportunity of observing the effect of both policies, and I should strongly recommend the postponement of poorhouse relief until famine has considerably advanced. It is only after a time that the absolutely helpless are thrown off by private charity, or that persons become physically incapable of earning their own livelihood. Relief works on the other hand should be opened at an early stage in order to evoke the self-reliance and moral energy of the people. I am not aware of any other means of Government relief applicable at this stage. I am of opinion that a *mont-de-piété* would be extremely useful to the poor in the famine year. An application was made last year to Government on this subject, but on further study of the question I came to the conclusion that these *monts-des-piété* were unnecessary in ordinary years, and could not be properly managed by the Collector and his staff. Undoubtedly any scheme for enabling the poor to get a reasonable price for their valuables in a year of famine would be a great blessing if practicable.

Mr. H. H. Webster.—I do not think that there are any other physical ways of affording relief but by the establishment of poorhouses. A house-to-house system of relief, which is the only alternative I can see, is in my opinion calculated to demoralise and pauperise the people to a lamentable extent; and besides, it is open to the objection that it affords a direct encouragement to peculation on the part of the distributors of relief, over whose actions in the way of disbursements no check is possible.

Major Liston.—There is little fear of people fit for work in this district resorting to the poorhouses. As long as they can work they will. To prove this, I quote Lieutenant Bagge, R.E., who in the famine of 1868-69 wrote,—"Many of them to avoid the "imaginary disgrace of taking food from the

Ch. II Qn. 7.

North-Western Provinces and Oudh

"charitable kitchen, would rather toddle to the tank, "then work for the day and toddle off with their "pay in the evening; and I saw more than one case "where we had to send weakly and sickly people "from the works to the poorhouse."

Mr. Whalley.—If the first measures described in the answer to the last question are ineffectual in preventing the village destitutes from flocking into the towns in search of charity; or if distress manifests itself at once among the poorer part of the urban population as under exceptional circumstances may be the case; and from either cause destitute vagabonds infest the streets and bazaars for the most part unfit for labour; then it becomes necessary to open poorhouses.

Mr. Cornwall.—Poorhouses may be opened to give relief without labour to such persons as through sickness, old age, extreme youth, or debility are unable to work. Such of the persons as come to the poorhouse in a feeble state may, after being properly cared for, be strong enough to be drafted to relief works; and as an intermediate stage, they might be given light work to do at the poorhouse. Except through State aid or private charity, there seems to be no means of affording relief to such persons.

Mr. Danell.—Poorhouses should be opened whenever there is evidence that helpless persons are suffering, old people, cripples, blind, widows, and children. I can hardly understand a case where relief works would be necessary much earlier than a poorhouse, and it is certain that after the persons on relief works can find employment at home, inmates of a poorhouse must remain until prices fall as they have no means of earning wages. Persons should from time to time be drafted from poorhouses to inefficients on the works when possible.

Mr. Crooke.—I do not believe that there are any circumstances under which a poorhouse should be opened without a labour test. Of course there are always a number of inmates—cripples and very infirm people—who can do little or nothing, but this does not affect the principle. As to *pardanishin* women, the only practicable way of affording relief is by establishing a native committee to collect the names of such people and distributing cotton to them, which they work up into thread and sell themselves or return to the poorhouse, where it is paid for, and a fresh supply of raw material is given to them.

Mr. Quinn.—The necessity for poorhouses arises as soon as distress begins. The beggar class of blind, cripples, lepers, &c., come on the hands of the district officers at once, and few of them can work. There are also a number of half starved wretches who have come in from the surrounding country, children who have been abandoned, &c., who must, for a time at least be fed gratuitously, municipalities can sometimes help.

Captain D. G. Pitcher.—So soon as the weaver class, a very large one, begin to show distress, a practical way would be to purchase, on behalf of Government, cloth in large quantities from these people at a price calculated to leave them a sufficient subsistence. This would keep large bodies of people at their homes, and the cost to Government should be little, as the cloth could be sold, when the distress was over, at but little loss.

Mr. Blennerhasset.—Poorhouses should be opened only for persons incapable of working, and only if it appears that such persons are in danger of starvation through the stoppage of ordinary charity. There are no other apparent ways of affording relief at this stage, except through private charity.

Mr. Lumsden.—Poorhouses should be opened to give relief in the shape of cooked food without a labour test to the aged, lame, blind, halt, and all suffering from such bodily infirmities as render it physically impossible for them to do any work.

Applicants of this description should be admitted into poorhouses as soon as it is clearly established that ordinary private charity is no longer able to meet the demands made on it for the support of the classes indicated.

Bengal

BENGAL.

Mr. Barlow.—I have a great objection to poorhouses, which, from the nature of the case, are demoralizing to those who frequent them. In any case, however, where substantial relief is called for at all, poorhouses require to be opened for the homeless poor, and habitual mendicants who cannot do ordinary work. Such institutions would have to be continued throughout severe famine for obvious reasons. The time to open these institutions would appear to have arrived when the beggar class begin to congregate in towns, &c., and wanderers, other than beggars, are found going about the district in a reduced condition. The experience of 1873–74 seems to show that during distress in its early stages, places where food can be granted to the lame, blind, halt, and outcast races (like the mussahirs in these districts) require to be established in order to prevent loss of life. A considerable amount of relief was granted thus from what were styled "relief centres" as distinguished from poorhouses. I should generally explain the distinction, I think, by saying that the usual, though not invariable, conditions in case of the former were uncooked food with non-residence, while for the latter they were residence with cooked food. No decent person of any grade would resort to either of these places except under the most extreme compulsion. The chance, therefore, of deception is reduced to a minimum. Amongst the class who do apply physical condition is a simple and safe test. The system has certain advantages as a test and means of gauging the distress. In the event of distress continuing and a complete agency being developed to deal with famine, poorhouses may continue, but relief centres should disappear, or nearly so. Relief works, light labour, and house-to house visitation should provide for all but the homeless and incapable poor.

The cost of relief centres as well as poorhouses has been in past instances met by contributions from private charity, supplemented by Government funds. Private subscriptions have, however, been so small that virtually it may be said that both kinds are forms of relief granted by the State. I do not know of any practical way of affording relief in case of moderate and temporary distress, other than those mentioned in the present and last answer, whether private charity be taken into account or otherwise.

Mr. Magrath.—Poorhouses should always be opened without a labour test. Where there are a large number of helpless beggars or infirm or sick people they should invariably be supplied with cooked food, and should be encouraged to work at spinning or twine-making or like labour. No person able to do a full day's work should be tolerated for one day, and separation of the sexes should be insisted on.

I do not quite understand the drift of this question, unless it embraces the whole subject of relief generally which I have no time to go into.

Mr. Hodgkinson.—Private charity is generally

equal to the task of supporting the poor and infirm, as well as habitual mendicants during the early stages of distress. If the crowd of mendicants to head-quarters is found to be excessive, a poorhouse should be opened, and I do not think better rules can be laid down than those of Colonel Baird Smith in page 140 of Mr. Geddes' "Administrative experience of former famines."

Mr. Toynbee.—Under the circumstances indicated in the first part of the answer to question 6, it would not at first be necessary to open poorhouses at all. If the numbers on the relief works began to increase rapidly: if besides the ordinary non-landed or labouring classes and professional earthworkers, the poorer classes of agriculturists began to come to the works, and if the new arrivals appeared in worse case than those who had come first; if prices continued to rise and markets to tighten, and if professional beggars and the aged and infirm belonging to the poorest classes began to leave their usual haunts and wander about the country, then it would be safe to conclude that private charity had shot its bolt; that the well-to-do classes had begun to fear the pinch of coming pressure, and that their charity had from prudential motives confined itself to the home sphere; then it would be necessary to open poorhouses for such classes and people only as were quite unable to work. To begin gratuitous house-to-house or village relief at this stage would only tend to demoralize the whole population and to interfere with the ordinary domestic industries of the country. At the initial stage of distress, task or piece-work at the ordinary rates for those able and willing to do it, and poorhouses for those who are physically unable, seem to be the only two measures required under the ordinary circumstances and conditions of most districts.

Mr. Finucane.—No poorhouses were opened in my circle. I do not think poorhouses would be at all required in the rural districts of Behar and Bengal as long as famine was kept well in hand. If, owing to want of village inspection, delay in opening relief works, or any other cause, people were allowed in the early stage of famine to become emaciated and unfit for work, it would probably be advisable to keep such persons in poorhouses and have them properly fed and cared for till their physique should have so improved as to render it safe to draft them off to relief works. Temporary sheds might be also required for those social pariahs who, in ordinary times eke out a subsistence by begging from door to door, and who have neither caste-friends to give them aid and protection, nor homes to give them shelter. Persons of this class (known as *kalars* in Behar) are happily very limited in number, but their sufferings are in ordinary years greater (at least in the more remote tracts of Behar) than is generally supposed.

Mr. Henry.—The only persons who should be admitted to relief in a poorhouse without a labour test are—

1*st.*—Aged and infirm adults permanently incapacitated from work.

2*nd.*—Adults suffering from temporary ailments.

3*rd.*—Children.

Whenever an applicant for relief is capable of work a labour test should be exacted from him.

Those whom the State will have to support in times of scarcity can be divided into distinct classes,—

1*st.*—Those who are thrown on relief *for want of work.*

2*nd.*—Those who are thrown on relief because the spring of public charity, which formerly *maintained them in idleness*, has dried up.

These latter are our paupers, habitual non-producers, for whose needs a portion of the store which would be available for producers has to be abstracted. For these paupers only is poorhouse assistance a suitable form of relief. My experience in the famine of 1874 justifies me in stating that assistance given through a poorhouse is considered a degradation, and the recipients tend to become pauperized.

Caste feeling on the subject is not as marked as in former years, but there is a well defined public opinion which pronounces against relief administered through a poorhouse. To the indigent poor who are thrown on State relief temporarily, and whose distress is attributable to causes beyond their own control, our assistance should be given in such a way that their feelings of self-respect and independence are not undermined.

By keeping them in a poorhouse, severed from home and home associations, chronic expectancy, and a dependent spirit are fostered. I cannot write too strongly against this form of charitable relief.

Mr. Kirkwood.—I must except from the general condemnation of poorhouses the circumstances of large towns, where the congregation of habitual beggars, of the blind and halt, and of some homeless poor, incidental to a time of scarcity, may render the opening of such an institution for them, and for them only, desirable.

Baboo Hari Mohan Chandra.—When springs of private charity begin to dry up, relief should be given in poorhouses without a labour test to those only who are incapable of working on labour test. I do not see any other way of giving relief except through private charity.

BOMBAY.

Mr. Hewlett.—If poorhouses are opened at the commencement of a famine, they will be crowded with what I may call the normal poor and infirm persons and mendicants who are found in every village in India. I think to prevent an undue charge being made against the State, that discrimination is required in selecting cases for admission, but where there is a general emigration of the ordinary well-to-do people and the ordinary sources of charity to these people is cut off, then I think a poorhouse must be opened in some central point, to which they could be sent.

General Wilkins.—Poorhouses should be opened to give relief without a labour test only during the height of famine, when the extreme poor and distressed are unable to perform any work whatever.

Mr. Spry.—Poorhouses should only be opened when it appears that private charity cannot meet the occasion; and only those should be admitted who are unable to work, or who are only able to do such work as is given in poorhouses. I do not think that the State should interpose till private charity fails.

Mr. Charles.—Poorhouses should be opened without a test as soon as reports are received of any considerable number of cases of persons being found lying exhausted from disease and travel, by the roadsides and in the temples and dharmsalas.

The experience of the last famine showed by what route the streams of wanderers usually go, and relief houses should be prepared in the same places long before they are opened.

An arrangement for patrolling the chief roads, in order to pick up persons lying exhausted, should be made.

Mr. Ramsay.—When actual famine arrives, I believe poorhouses must be opened for those who cannot work, and who would die if not thus relieved;

Ch. II. Qn. 7.

Bombay.

even when aided by Government money, these, I think, can be best supervised either by associations of private persons, or by municipal committees. Both these agencies were used in this district and with complete success. There have always been found native gentlemen of means and leisure willing to aid in this work, which involves finding out the persons in need of aid, and then seeing that the relief is properly distributed. Government need only provide medical officers and medicines, and money of course if available. Government interference is apt to wither up private benevolence. Local committees could be organized in every large town if necessary, and each could have its poorhouse.

Mr. Norman.—When it is found, from an accumulation of beggars in an emaciated condition, and from a careful village inspection, that distress is on the increase, it will then be necessary to open poorhouses at one or two selected places in each *taluka*. There seems to be no other practicable way of affording relief.

Mr. Robertson.—Relief camps or poorhouses must be opened to give relief without a labour test, wherever there are numbers who are destitute, and are unable from old age, sickness, or from weakness from want of nourishment, to perform any work; women far advanced in pregnancy, and weak mothers with sickly infants, must also be admitted.

As far as my experience goes, there are no other practical ways of affording relief at this stage, except through private charity, while that even requires to be placed under control.

Colonel Anderson.—When wandering beggars in a reduced condition begin to appear, evidently suffering from want of food, a poorhouse may be opened, but it should always be a closed house within which those relieved should be interned and some form of work at any rate should be exacted. Besides other reasons this is the only way of preventing relief being obtained there, and from private charity also; thus only can people with friends able to keep them be kept from being thrown on the poorhouse for support.

Madras.

MADRAS.

Mr. Price.—At the stage next succeeding that which calls for special works, and which is that when distress has deepened so far that parents are unable to obtain for their wages enough to keep their children from marked emaciation, when the poorer classes find that they cannot support the aged and infirm, when the weakly, owing to reduced food, grow still weaker, and when the artizan, especially the weaver, finds that the demand for his industry is falling off and his earnings becoming in consequence insufficient, and when sickness is increasing, I would take in none but the infirm, aged, the really emaciated, the sick, and children in bad condition. I would exact no labour test, but whenever any one was capable of doing something I would not allow him to remain idle. I know of no practical means of affording relief in other ways than this at this stage of famine. Advances to weavers tend to prevent their falling into idle habits and keep that section of them unable to perform manual labour out of a relief camp; but, on the other hand, this form of relief throws upon the hands of Government at the close of a famine a large quantity of cloth, of which experience has shown that it is very difficult to dispose. Distributing materials for spinning would require a considerable agency, and the same difficulty in disposing of it as occurs in the case of cloths would arise. Mat, basket, and rope making, &c., are professions which are carried on by limited and particular classes, and giving materials for these, which, in many places, would be very hard and expensive to obtain, would not, in my opinion, afford much relief.

Mr. McC. Webster.—Poorhouses should be opened as soon as it is decided to reduce the rate of wages on ordinary works to a famine "wage test." By such time there will be a number of sickly and infirm habitual beggars and others who are not able to work, and these must be provided for. There may also be cases of emaciation, few it is true, but still some, in the villages, and these people should be taken to the relief-houses and brought into a condition for work. I do not think private charity would be of any real use at this stage in affording relief, which should, as above remarked, be afforded by Government, first, by works for those able to work; secondly, by poorhouses for the weak and infirm; and, thirdly, when necessary by money dole for Purdah-nashin women and the sickly and infirm who are unable to leave their villages.

Mr. Martin.—When a famine is at its height, paupers will stray in large numbers into districts that are not suffering from famine, but in which prices are very high. They will especially resort to the larger towns, and will strain private charity beyond what it can bear. It will be necessary to open poorhouses when the condition of these people begins to get precarious.

Poorhouses should not be opened without a labour test.

Mr. Oldham.—It is always easy to open a poorhouse, and also to see when it is wanted, which apparently is not for some months after other needful relief operations are in force. The practical way of affording gratuitous relief is by village home relief. With the system of works near the homes of the distressed in force, and a very restricted home relief, poorhouses in the general sense of the word are not needed at all. Chumpárun, in 1874, was an instance of this. So was Adoni from March till May 1877. A small hospital or infirmary would suffice.

Major Mead.—No one should be allowed to remain in any Government poorhouse (except for a day or two when in the search of work) that is capable of work; those that are should be drafted to works as soon as practicable.

Poorhouses or relief camps should be opened when there are large numbers of wanderers incapable of doing work and evidently suffering from want of food.

Lieutenant-Colonel Hasted.—Poorhouses should not at this stage be opened by Government; private charity will, if organised properly, do what is wanted in large towns, but the organization can only be effected by the collector, vice-president of a muncipality, or other Government officer, to whom the people are in the habit of looking for guidance and assistance. Hospital sheds are at this time wanted, and might be attached to municipal and taluk dispensaries, the charges being met by Government. Deficiency of nourishment quickly induces disease, and the dispensaries cannot provide sufficient accommodation for in-patients.

Mr. Macartney.—At the early stage of a famine I do not think that the establishment of poorhouses is necessary or advisable. The mendicant portion of the population can be assisted at much less expense to Government. I would reserve the establishment of relief houses, to a later period of the famine, and for such of the younger and middle-aged portion of the population as from want had become temporarily unfit for work, but who, under the dietary of the poorhouse, might speedily be recovered for labour.

MYSORE.

Major Moncrieff.—At this stage poorhouses should not be open. Provisions will not yet be at famine rates, and the helpless poor should be supported by their relatives.

Mr. Ricketts.—Poorhouses would be undesirable at this stage. Private charity should, and I think, would do all that was needed, and where private charity was insufficient it should be supplemented by Government contributions on the condition that there was due discrimination used in distributing the charity.

Colonel Johnson.—If by poorhouses be meant relief camps, in which all-comers are to be taken in, kept, and fed for nothing, I cannot too strongly reprobate such an arrangement. At the same time, in the height of a famine it is absolutely necessary that there should be places at which the starving wanderer can be provided for. It is in the proper control of these places, it appears to me, that one of the chief difficulties in managing a famine lies. How to deal with men who will not work, and who, if they are turned out of a relief camp will starve themselves until re-admitted, is a question I have never seen practically answered yet. The difficulty has been got over by sending them on to a work, and paying them whether they worked or not, but I do not consider this by any means what ought to be done. Making a relief work in this manner into a regular Lungerkhana, certainly provided for a vast number of cripples, professional beggars, and other utterly useless and worthless members of the community, but it deterred a very large number of destitute respectable people from resorting to the works. The latter were willing to work and be paid up for what they earned, and would have come to a public work managed in the ordinary way where they could have got a pit to themselves, but they could scarcely be blamed if they declined to let their wives and daughters herd with and work beside the most abject scum of the country. I believe that many really deserving respectable ryots were deprived of the assistance which Government so liberally supplied, on this account alone, it having been frequently brought to my notice in the districts that men had refused to go to the works for this reason. In the arrangements generally made for relief, it appeared to me in short that the greatest amount of attention and assistance was devoted to the least deserving. From the time indiscriminate relief was thrown open at the so-called kitchens the skulkers became masters of the situation and remained so to a great extent to the end. By endeavouring to work them, moreover, with the willing the whole lump was leavened. Until some deterrent punishment be devised for people determined to starve rather than work this must always more or less be the case. So long as they are sure they will not be allowed to starve they will assuredly try it on.

QUESTION 8.—PRIVATE CHARITY AT EARLY STAGE OF DISTRESS.

Is there at this stage of the operations any field specially appropriate for the intervention of private charity? If so, what is that field, and how should the charity be organized and directed?

Punjab.—7 replies are given. They indicate poorhouses and relief of purdah-nishin women as the objects of private charity.

North-Western Provinces.—24 officers answered the question in the same sense as the Bombay officers.

Bengal.—The answers, 11 in number, are mostly to the same effect.

Bombay.—9 officers answered the question. Private charity may be administered by committees and applied to the relief, especially of purdah women and poor sick people in their homes.

Madras.—20 European and 2 Native gentlemen have replied to this question.

There seems to be a pretty general consensus of opinion that in the early stage of famine relief operations there is no field especially appropriate for the exercise of private charity. The main objection to it as a means of relief is the difficulty of systematising and controlling it, and unless judiciously administered it is certain to be abused, to clash with the organised measures of State relief, and to demoralise the recipients. This means of assistance it is thought might come into play more advantageously at a later period, which will be dealt with under Chapter III.

PUNJAB.

Muhammad Hayat Khan.—When the distress has spread throughout the district, private charity might intervene and afford relief to the needy. Charitably disposed persons would, no doubt, be glad if they are saved the trouble of giving alms to individual persons, to subscribe a certain sum which will go in forming a relief fund. From last year's experience I am of opinion that it would conduce to the public good if a committee of management composed of official and non-official persons is formed at the head-quarters of the district. Persons subscribing to the relief fund might be invited to become members of it. The committee may be put in charge of poorhouses. Their duty will consist of (1), to regulate the scale of diet; (2), fix the time and manner of distribution of food; (3), determine whether cooked or raw food should be distributed; (4), make arrangement for lodging, &c. Sub-committees may also be formed in large towns. They will be guided by the rules framed by the Sadar Committee, and take instructions from them. The president of the Sadar Committee will be the head civil officer of the district. The committee will, besides other works, examine the accounts of the poorhouse. As this committee will comprise a large number of non-official members, they would be able to raise and collect subscriptions. The members of the committee will divide the work amongst themselves, and two or three of them will in turns supervise the distribution of food. The arrangements herein proposed proved very successful in this district last year.

Colonel Parsons.—The field specially appropriate for private charity is the relief of distress among persons wholly unable to labour. (*b.*) Charity can be evoked by means of committees of notables, and appeals by circular or otherwise.

Mr. Roberts.—In the earlier stages of scarcity which is likely to be temporary, the support of the helpless

Ch. II Qn. 8.

Punjab.

poor may be left almost entirely to private charity. In this district, up to the present, no help has been given from provincial or Imperial sources. The poorhouses were started, and for some weeks maintained with funds subscribed privately, and these contributions formed an important addition to the local resources. They were not, however, administered separately, but formed into one fund with the grants made by municipal and district committees. In times of severe famine the case would be different, as the private subscriptions would be completely swamped. If organized independently, the relief of *pardânashin* women would be a suitable field for the employment of private funds. So would the distribution of funds to aid farmers and shopkeepers in starting business afresh when the famine was abating.

North-Western Provinces and Oudh.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Sells.—The relief of indigent "*pardahnashin*" women is, at all stages of distress, a most legitimate object for private charity. At the commencement of severe pressure, the Government official, in the various towns, in concert with the most respectable and trustworthy residents of the muhallas, should be called upon to furnish nominal lists of such women who have no relatives able or willing to support them. I should myself regard a simple money dole, as, on the whole, more satisfactory than the requiring of an actual show of work. The strict maintenance of the latter system is likely to prove a difficult matter. On this point, however, I have scarcely had experience to justify any expression of opinion.

Mr. Sandys.—The relief of respectable women who cannot appear in public, and cannot therefore receive food at the poorhouse.

Mr. Cornwall.—As far as possible, I think that the above class of people should be left to private charity to support, the State only giving relief in return for labour.

Mr. Crooke.—The relief of *pardanashin* women is a peculiarly appropriate field for private charity. These people cannot be got at, except through native agency. A native committee consisting of native gentlemen organized and directed by a native district official is the most feasible means of working it.

Mr. Quinn.—The distress which drives mendicants and the labouring classes to the poorhouse and to relief works very quickly reaches the large class, which exists in all old towns, of indigent persons of respectable family, whose females are purdahnashin, and whose males have never applied themselves to manual labour. In ordinary times the men get employed as servants, bailiffs, &c. This class always live beyond their means, as their expenses, marriage, and other, are on the scale of the former and not the present means and position of the family. When famine approaches the men often lose their appointments, and women with no near relations cease to get charity from distant relations and caste fellows. The relief of this class, who may be looked upon as the victims of the Indian social laws, is a very suitable object for private charity, and this charity should be controlled and distributed by native gentlemen, who should be representatives of the class to be relieved. Where Government gives a grant in aid, proper returns showing the way in which charity is being dispensed must be furnished.

Mr. Blennerhasset.—Private charity might be employed to support the poor of the higher classes in towns and *parda-nashin* women, provided distress prevailed among these classes. Natives of wealth and position appear more ready to support these classes than low caste labourers.

Committees of influential natives in towns might be formed; it would be necessary, however, to associate some influential person or Government official to secure success in organization, and to prevent embezzlement.

Bengal.

BENGAL.

Mr. Worsley.—I am not in favour of any organized private charity at this stage of the operations. Zemindars should be strongly admonished on the subject of maintaining their own village paupers.

Mr. Magrath.—There is only one field that is in any way open to private charity, so far as I know, and that is house-to-house visitation. In this way only can we come at the "I cannot dig, to beg I am ashamed" class, fortunately rare in India. The wholesale feeding which goes on in famine time by rich people is not only not useful but baneful, as it tends to upset the organized labour gangs in the neighbourhood. The Burdwan Maharaja in 1866, I well remember, was obliged to invoke assistance from Government to prevent his charity from being abused, (1) by people who were getting relief elsewhere; (2) by people who had means of their own and were not fit objects for charity. Of course local charity may take off the hands of Government certain orphans and infirm people, but that is no great help till relief regularly closes. So far as I have seen it, private charity has so far as famine goes been absolutely useless, and we should have done as well without it, in some cases better.

Mr. Finucane.—In the early stages of famine municipalities and such local bodies might give employment in towns by carrying out schemes for drainage, embankment, opening up new streets, widening old streets, and the like. Government relief operations might be thus confined to opening of relief roads and similar works in the interior. Local committees might be also most usefully employed at this stage in seeking out and assisting distressed persons who are unable to work, and in making out lists of those who are likely to require State gratuitous relief at a later stage.

Mr. Abbott.—Indigo factories are so scattered over this district that they form perhaps the best centres for relief measures, and in almost all instances the planter will be only too ready to give his aid and the use of his buildings during non-manufacturing seasons gratuitously; his intimate knowledge of the villages, and the condition of the inhabitants, must be of far greater reliability than the garbled statements of the native police or zemindars, whose accounts are always more or less coloured, according to the light in which they fancy the views of the inquiring officer lie. Private charity is much better employed when passed through Government hands; the private food kitchens may be opened if the Government ones prove insufficient; money being given away should always be discouraged, as it tends to draw the people away from best labour and cooked food.

Mr. Kirkwood.—The following are methods by which private charity should, in the initiatory stage of a famine, be utilized.

A really earnest district officer can, and will, if he is wise, do much towards extracting the genuine good

will towards distress which lies often in a somewhat slumbering state at the bottom of the hearts of native gentlemen, and towards bringing it into practical operation. This he can effect by inducing landlords and others of a similar position to look to the condition of their estates, to relieve gratuitously and immediately all scattered cases of serious distress which may arise before the Government machinery has got to work, to open at their own cost and under their own management works, such as roads and embankments, works for the improvement of drinking water, or for the storage of water for irrigation, and other works for the improvement of their property. The district officer should, if they apply for it, advance Government money to such landlords for such improvements, under rules probably somewhat modified in stringency from those applicable to such advances when made in ordinary years. Much good was effected in Bhagalpur district in 1874 in this way through the really valuable co-operation of several of the resident landlords. They proved themselves very serviceable tools, which, if not fashioned quite on European principles, could do good work in the hands of an officer who would take the trouble of adapting himself to their peculiarities.

BOMBAY.

BOMBAY.

Mr. Hewlett.—I think that the establishment in towns and large villages of *dúdkhanas* for the feeding of young children might be left to private charity, and also the searching out cases of distress among respectable families, especially among the women of the poor artizan class. If funds can be collected, a committee composed of Hindu and Mussulman members should be formed, and the members should visit the houses of their respective communities and report to the committee. Money should not be given, but grain or cooked food, and labour should be demanded, such as spinning or weaving.

Mr. Spry.—Private charity at this stage might well be directed towards relieving Brahmin widows and *Gosha* women, who, not appearing in public, may be reduced to great straits. Committees of charitable and influential native gentlemen might be formed to look after these cases, and also those of poor sick people who are unable to leave their homes.

Mr. Charles.—The gift of clothes and blankets seems to me the field especially appropriate to private charity, that is to say, that a sum should be given out of private funds to the relief officers, to be expended in giving warm clothing to children and weak persons. The Government famine operations are mainly devoted to supplying food, but there can be no doubt that great suffering and many deaths resulted last year from the exposure the famine labourers (more particularly children and weak persons) had to undergo, the cold and damp bringing on dysentery.

Mr. Norman.—Private charity can best be utilized by contributions to municipalities, whose operations must be supervised by public officers. It may also be devoted to the purchase of clothes to be distributed under careful superintendence at the various poorhouses. Some provision can also be made in this manner for the custody of orphans.

Mr. Bosanquet.—In this district at the commencement of the distress a committee was formed at the head-quarter station for collecting contributions and administering relief. Similar committees were formed on a smaller scale in the smaller towns in the district. For some months, owing to the private charity thus administered, the amount of gratuitous relief which Government had to give was comparatively small. I think the manner in which such committees should be formed and the nature of their proceedings, should be left to local circumstances.

Mr. Robertson.—Yes. Private charity can at this stage do much, by establishing relief houses, by clothing those at the relief houses who are in rags. But private charity must be controlled, it must not be allowed, by indiscriminate and ill-judged aid, to undo all the work of Government and cause the mass of the population to resort to begging. All private institutions should be so organized and directed as to act in accordance with the system enforced by Government, being thus a true aid both in means and in agents.

MADRAS.

MADRAS.

Mr. Whiteside.—I do not think that there is any field to which private charity should be more particularly directed; as I have said above, the less private charity is meddled with the better when famine is in its earlier stages. When the distress is very severe, and it is seen that the charity of private persons is being abused or misapplied, so that persons not really entitled to it are excluding from relief those really in distress, then it will be proper for district officers very cautiously to interfere and to point out how the charity should be best applied. But such interference is always very jealously regarded by natives. They believe that by allowing such intervention they lose some of the virtue acquired by their charity, and my experience in this famine has shown me that when the district officers began to show a desire to direct the exercise of private charity, such charity gradually was discontinued.

Mr. Grose.—Private charity seems to me to be dangerous when the time for poorhouses has arrived. People are generally ready to give money then on the condition that they may have a voice in the management of the poorhouses; but it is essential that such places should be very strictly disciplined from the first and under the entire control of the collector.

The charity of neighbours who give their money directly to deserving objects whom they know is an unmixed good; but I do not think any organised charity can exist by the side of State relief till a time has come when the people, though not starving, are in great need of help to enable them to recover from the condition into which famine has brought them.

Mr. Knox.—I do not think that at this stage any organised private charity is necessary.

Private charity in general, when it consists in simply giving alms, except to helpless people unable to work, does more harm than good.

Mr. T. M. Horsfall.—Private charity (but not unless very *judiciously* and *conscientiously* conducted) is beneficial when famine begins to be severely felt in *towns*.

Mr. Lee-Warner.—My experience of private charity among the natives is that it is generously given, but grossly misapplied. The most appropriate field for the application of it will be found to be in connection with the local fund and municipal dispensaries, which are becoming every day more popular. Natives are very charitable in their own ways; but they have no idea of supervision and control. There must be some shadow of authority over the institution, else, like ordinary

CH. II. QN. 8.

MADRAS.

native charity, it will become unmanageable; and therefore it would be necessary, in my opinion, for the resident Government officer to have the supreme control over it. Persons to whom charitable relief is extended, but will not submit to control, should be left to shift for themselves.

Mr. Oldham.—Towns are always a field specially appropriate for the intervention of private charity at all stages of a famine. A committee would be formed. If it is weak in funds and working members, it can deal with the fixed and identified residents of the town who are in distress, and to whom out-door labour would be a special hardship. It can work by dividing the town into as many portions as are necessary, each portion being visited and managed by the member of the committee thereto appointed, or by a paid agency. If very weak, it can reserve for its work one or more such portions. It can relieve wholly gratuitously, or by affording in-door work suitable for the recipient. I doubt if it is wise for the State ever to undertake such operations, though I have seen them largely resorted to.

It can also, if strong enough, superintend a hospital attached to the town for the reception of all comers. Apart from this, it is only mischievous if the committee engages in any relief operations to which outside people can be attracted. But if very strong, it can afford out-door relief labour for the pauper residents of the town who are fitted for such work.

Mr. Cook.—At this stage of distress, I do not think there is any need for the intervention of private charity.

Mr. Macartney.—There is no doubt that at this stage private charity could, and ought to do much to alleviate the existing distress. Committees of the well-to-do portion of the community might be formed, subscriptions raised, and a system of relief organized for the necessitous and infirm poor in towns and important villages.

MYSORE.

MYSORE.

Mr. Ricketts.—Relief works cannot meet all cases of distress, especially as regards the respectable poor. Private charity can then step in appropriately and should be organized and directed by the amildar, especially with reference to avoidance of narrow views regarding caste as well as the supposed meritoriousness of feeding applicants irrespective of downright want.

CH. II. QN. 9.

QUESTION 9.—LOCAL COMMITTEES AND NON-OFFICIAL CO-OPERATION.

To what extent and in what manner may the organization of municipalities and local fund committees, so far as they exist, be utilized in this stage? In the absence of such local bodies how could the co-operation of influential non-official persons be best organized and utilized either in connection with the regular district authorities, or otherwise? State specifically what plan would be suitable in your district.

Punjab.—7 answers. The opinion is that members of municipal and local committees may be utilized rather than the corporate bodies, and there is a preference for the employment of Government officials.

North-Western Provinces.—25 officers answered. The opinions are generally the same as those of the Bombay officers.

Bengal.—13 officers answered. The substance of the opinions is the same as the above.

Bombay.—Answers were given by 10 officers. The majority think that municipal committees may be utilized, and also local fund committees in a less degree, because their members are scattered. But supervision by a Government officer is expedient. The co-operation of notables may also be obtained, but not in an organized way.

Madras.—15 European and 3 Native gentlemen have replied.

Municipal and local fund boards are composed principally of natives of the country, whose assistance in administering relief in times of famine would be most valuable if it could be relied on. But, with comparatively few exceptions, this is not the case, and two of the three Native gentlemen who have replied to this question testify to the fact, and the remainder of the evidence goes to show that the organisation would be of little practical utility. Experience has also shown that the personal co-operation of influential non-official persons cannot be calculated on.

PUNJAB.

PUNJAB.

Mr. Wood.—In the Murree Sub-division personal supervision by the local authorities was the only means at hand, the leading natives being unable to devote much attention to the subject.

Colonel Parsons.—(*a.*) Municipal and local fund committees can be utilized in voting as far as funds at their disposal conveniently admit, provision for special and useful relief works, and grants towards kitchens for relief of distressed people unable to work. (*b.*) When no committees exist, village headmen and *Zaildárs*, where they have been appointed, may be invited to interest themselves in relief operations, and afford assistance in organization.

Mr. Coldstream.—Members of municipal committees are most useful in distributing charity to the deserving poor. The members in Hoshiárpur have each a circle allotted to them, and with the condition of its inhabitants they are specially acquainted.

The system of allotting funds at meetings of committees and calling each member to give an account of what he has spent, in more or less detail, is quite understood, and has been found to work well.*

The corresponding agency in rural tracts should be the *Zaildárs*, who are the representatives of Government in their respective circles. They are more certainly men of influence and position than members of the district committee; and being paid for their work by a small per-centage on the revenue of the villages of their circles, have the more inducement to

* Yes; power and responsibility create interest.—A.B.

co-operate cordially in any relief efforts, and can be more appropriately asked to do so.*

The *Zaildári* agency in this as in other matters is a reliable source of administrative strengh to the district officer. Most of them might well be trusted with small sums to be spent in the distribution of charity.

They would distribute it through the *Lambardárs*, from whom they would take an account; and they themselves would in their turn render one to the *Tahsíldár*.

Mr. Roberts.—As to the supply of funds by local committees, see last question. The committees of Rewári and Farukhnagar have undertaken the whole management of pauper relief operations, and much credit is due to the Rewári Committee for the interest they have displayed in the matter. I do not think district committees can be usefully employed in the same way, as the members are all isolated. Any funds raised within their own circles might be entrusted to *Zaildárs* for distribution, but with these exceptions, I would not organize relief establishments anywhere, except at the head-quarters of tahsíls, where there would be some hope of effective supervision.

Mr. Nicholl.—Municipalities might be very largely utilized at this stage; most municipalities in large towns would give material assistance in money so far as the funds at their disposal would admit, and the members might with advantage be employed in superintending the distribution of relief, and in various other ways.

During the recent distress, the members of the Amritsar Municipality contributed largely to the amelioration of the condition of the poor of the town, by distributing private charity, superintending the distribution of food at the poorhouse, and in paying gangs of labourers.

Mr. Benton.—Any relief works that would be opened would, at least in the first instance, be works from municipal or district funds; and they would be executed, so far as possible, by the municipal and district fund establishments. The execution of small works is frequently made over to members of the municipal committees, and the arrangement answers. In a time of distress the same thing might be done for relief works, but I think it would be very necessary for the district officer, or some of his subordinates, to inspect the works frequently. The execution of district fund works has never been committed to non-official members of the district committee.

During the past year the payment of labourers on some of the relief works was entrusted to members, but they did not give satisfaction. It is possible, however, that if the execution of the works were once properly organized, and if the members were supervised and assisted for some time by the district officers, they might give valuable assistance in this way. It must be remembered, however, that they are all, or nearly all, illiterate, and are incapable of doing anything by themselves without the assistance of a writer.

If it were necessary to make a house-to-house visitation in order to reach persons who would rather starve than apply for relief to the district officers, or to prepare a list of distressed persons in any locality with a view to their being admitted to poorhouses or to relief works, the assistance of members of these committees would be very valuable. The *Zaildárs*, where appointed, would render similar service, and where no *Zaildárs* are appointed, any other rural noable of the same class. In each zail or Patwari's circle the *Zaildár* or other person in the same station, or a member of the district committee, and in towns members of the municipal committees, assisted by a writer of the committee establishment, might be desired to prepare lists of persons who were in want of relief, whether at a poorhouse or outside of it, or on relief works. The list would then be checked by a *tahsíldár* or district officer to ascertain that they had been prepared correctly. If it were necessary to establish numerous poorhouses, it might be advisable to appoint some of these persons to the charge of some of them; but close supervision would be necessary, especially considering that these persons are illiterate and very liable to be imposed on. If it were necessary to convey relief to the sick, cripples, or bed-ridden, these persons might be required to give the relief in presence of the *lambardárs* of the village. In the case of *pardah* women, usually some relative or person of the same caste might be appointed to receive it.

* As I pointed out to some of the members of the Commission at Simla, the old Jagirdárs were a sort of spring or buffer for times of distress. It was looked on as their duty to spend liberally in such years, and the Dharmsalas which retained grants borrowed largely last year and fed larger crowds as part of their duty.—A.B.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Sells.—Municipal committees may well be utilized in all classes of relief. There will generally be some works of utility that can be suggested as suitable also for relief purposes, and municipal committees should so far have full authority to divert funds from the projects sanctioned, perhaps nine months or a year previously, in the budget, to any of a more suitable nature, if the emergency occurs. Municipal committees also are admirably adapted for the supervision and management of poorhouses, and for the distribution of gratuitous charity. In all towns of any extent, also, whether municipal or not, there will be some residents of position, influence, and character, sufficient to justify their being entrusted with money for the purpose of gratuitous charity. They can be formed into local sub-committees entrusted with funds by the central committees and bound to submit to the latter an account of all disbursements; and such people will also be found *ready* to assist.

Mr. Sandys.—There are municipalities and a local fund committee in this district, the members of which might be entrusted with the preparation of the lists of respectable women requiring relief and the examination and passing of applicants for admission to the poorhouse, and the management of all arrangements connected with the preparation of food.

Mr. Tracy.—In municipal towns the poorhouse should be a municipal institution, supported as far as possible by municipal funds and private contributions, and the management should be confided to servants of the municipality, under the supervision of the members of the committee. In this district (Moradabad) most of the influential men of the place are members of the municipal committee. They are associated with the district authorities in the management of the poorhouse.

Mr. Leeds.—The members of municipal and local funds committees, as being possessed of local influence and knowledge, may, no doubt, with advantage be associated with the officers of Government in the administration of gratuitous relief; but it is impossible to deny that, with the exception of a really public spirited individual here and there, they do not afford much assistance to the district staff. I would therefore avail myself, as far as possible, of their services, but without relying too much upon them.

Mr. Lawrence.—I tried utilizing members of municipal and other committees, but to little purpose.

Ch. II. Qn 9.

North-Western Provinces and Oudh.

The work to be done is too large and the responsibility too great for non-officials to mix themselves up in it.

Mr. Whalley.—It is a good thing to have the poorhouse managed by a sub-committee of the municipality, and when poorhouses are wholly or in part supported by municipal funds the propriety of such an arrangement is obvious. I have not thought of utilizing a local committee as a corporate body, beyond consulting them on the opening of relief works. Such a committee might be useful, after fixed rules for the conduct of relief measures had been laid down and made known, to facilitate carrying them out, but I am doubtful of the value of such a committee for consultative purposes.

Mr. Webster.—In towns the municipal committees might be very useful in finding out and bringing to the notice of the district authorities cases of distress when the sufferer would rather starve than make his or her case public; these cases would or ought to be exceeding rare among men; but among women they are unfortunately common enough and call for our deepest sympathy. To search out and afford relief to such women as the customs of the country or their own infirmity prevents from claiming public relief is a task which municipal committees from their constitution are eminently qualified to fulfil. In the absence of such local bodies the district authorities should associate with themselves natives of position, influence, and integrity, and the committees thus formed should discharge the functions above noted. There are municipal committees in all the important towns in this division, and here I would work through them. Cases of distress of the above nature in villages should be sought out by the tahsildars and their subordinates.

Mr. Adams.—There are no non-official persons in this district whose co-operation could be made useful during the early stages of distress.

Nor do I think that the organization of the municipal or other committee would be found of any value here.

Mr. Stoker.—I do not think that any of these committees can be utilized as committees. Individual members of them, and also individuals who are not members, may be made useful.

In this district I would calculate on having to manage and administer everything through the ordinary official staff and such officials as—*e.g.*, the subordinate judicial officers, &c.—are not usually employed on any executive duties. Some assistance could be procured in the city from residents thereof in the shape of visiting a poorhouse, and the missionaries would, I have no doubt, give valuable services. Beyond this, I would not count on receiving even non-official information, much less active aid, to any extent worth considering. I, of course, reckon all the Court of Wards officials (who could be made very useful) as Government servants.

Mr. Crooke.—Municipal committees can be utilized to superintend house-to-house relief, principally of *pardanashin* women.

Colonel Fisher.—There being no municipalities in Garhwál, I found that a circular letter addressed to the most influential non-official persons, pointing out the obligations they were under to help their countrymen, attended with the very best results. Thus at Srinagar a poorhouse was opened and maintained for about three months, when scarcity was at its highest point, by a joint organization consisting of the native extra assistant commissioner and the leading men of the mercantile community. In Garhwál the people very readily respond to a call for duty of this kind; they value it as a recognition of their wish to help Government and the people. The native agency, if not hampered and worried with too many calls for statements and averages, manage the funds much more economically and make them go much further than a European officer, however experienced, could. A poorhouse managed by natives will buy grain also much cheaper than a district officer could in the same market.

Mr. Quinn.—The organization of municipalities is most useful. The municipal committee should, in time of famine, take in charge the relief, gratuitous or in lieu of labour, of the municipal poor. The committee should be broken up into sub-committees to look after municipal relief work, admission to the poorhouse, distribution of food, out-door relief of *purdahnashins*, &c. There should be a general meeting once a week. The municipal conservancy organization can easily be extended so as to include a local poorhouse or relief camp.

Local funds committees cannot be formed into a standing central relief committee, because they are composed of the leading men of all parts of the district, but each *tahsil* should have a famine sub-committee composed of the leading residents, members of the local fund committee or not.

Colonel Chamier.—There is only one municipality in this district, and that is at the *sudder*, where ample means of organization exist. The co-operation of influential and non-official persons is easily obtained and ungrudgingly given. It only requires that some Government official should be placed over them, for without a president, who takes his position by virtue of his official rank, bickerings are fostered in the committee, which really owe their origin to disputes as to precedence.

Captain F. Currie.—The municipal or local fund committee, as a body, is of no use. Only three native members in the former have leisure, energy, and are reliable enough to be of aid.

Mr. Lumsden.—In my opinion, municipal committees should in such times undertake the maintenance of the regular pauper population residing within their limits, unassisted by special grants from Government. By regular pauper population I mean such residents within municipal limits as might be considered fit inmates for a poorhouse; not *all* the lower classes residing within municipal limits, who on account of the dearth of ordinary labour and the dearness of the necessaries of life might come forward and seek employment on relief works. Towards the assistance of these latter classes municipal committees should contribute according to their means, but for the support of the former they should be held absolutely responsible, and in arranging for the expenditure of the funds at their disposal they should be compelled to put aside a per-centage of their income for this purpose, which might, if necessary, be invested, but in such a form as to admit of the amount being readily recalled when required.

Bengal.

BENGAL.

Mr. Barlow.—In all cases of distress, temporary or serious, the agency of a municipality, both as respects strength and quality, should well suffice to ascertain, watch, and meet the distress occurring within its limits. In this part of the country municipalities exist only in two or three most important towns in

each district. Hence the committees are strong. The work would be distributed amongst the members, and be carried on under the direction and supervision of the chairman, who is usually a Government officer. "Local funds" comprise here road cess and educational committee men. All the planters and many of the native members on these committees would undertake the work of starting petty works and administering poorhouse and "relief centres" assistance, and they would do this duty fairly enough. The number of helpers, however, under this head is small, and the labour is likely to be neglected or abandoned if it grows extremely onerous in character.

I cannot state any plan for securing the general co-operation of influential non-official persons in the management of relief. Something may be done, and was done in 1873–74, by inducing landowners to undertake works of improvement. These provide labour, and can do no harm. When, however, we are concerned with watching and relieving distress, matters are different: not only does any bad arrangement defeat the object in view, but it does positive harm, as the people are demoralized by relief improperly administered. District officers may now and again venture to try relief work in the hands of some one who appears in every way qualified to administer it. So far, however, as my experience goes, the result is uniformly the same. When the inspecting officer goes round the thing is found to be a failure, relief is proved to have been badly administered or granted to the wrong people, and the relief works and houses have to be cleared. There is no want of willingness on the part of the better class of people to lend their help, but they are unfitted to carry out the duty properly. I would not entrust relief work to unofficial persons free from supervision at an early stage of distress, for fear of developing famine, and I would not leave it in their hands (unassisted) when famine had come for fear of failure and an undue waste of money.

Colonel Burn.—All such funds are at the disposal of the district officer, and should be only utilized through him by those he entrusts with distribution. I am strongly against divided authority in emergencies. Exceptionally in Durbhunga, a large zemindari like this raj should be called upon by the district officer to undertake the relief of its own entire villages, *i.e.*, where it holds the whole 16 annas of the village. In such case sub-relief officers in the mofussil should be enjoined not to interfere with, or add to, such relief operations, but to report to the district officer where they appear to fail. With the above exception the district officer should be supplied with an extra staff of European assistants, and all relief emanate from him and his subordinates, every landholder being invited to contribute to the general relief fund.

Mr. Magrath.—Municipalities are useful in only one way, and that is if the commissioner of each ward or mahalla will undertake to look up the poor of his own ward, sending those fit for work to such works as there are, and the impotent poor to the poorhouse, and supervising the issue of materials for the work of spinning, weaving, &c., and the other products of skilled labour. Local fund committees, so far as my experience has gone, have been dead failures; they have met to talk and pass resolutions when they ought to have been out at work. Influential non-officials are useful if they work with their own hands and brains, and do not leave the matter to their under-strappers; but they should distinctly undertake one particular work, the charge of a circle, the care of a poorhouse, or the like, and be responsible to the local authority under whom they work. In this way a number of the planters assisted me. One lady took very successfully charge of a poorhouse, one zemindar superintended the construction of a bund when the rains fell, and so on; but unless the work laid down for them is clearly and distinctly their own, and they decide to work it themselves, non-officials are more trouble than they are worth. With regard to my present district, I would utilize the Wards' Commissioners for the purposes I have described above, *i.e.*, looking up and finding out the poor. In the district I would assign special works to anyone willing to assist, but I would not employ non-officials as circle officers, as I think their employment in this way in 1874 led to a great deal of wasteful expenditure.

Mr. Hodgkinson.—There would be little difficulty of securing the co-operation of non-official gentlemen both in the station and the interior. In the station native gentlemen would predominate, while in the interior, owing to the paucity of influential native residents, it would be necessary to trust principally to Europeans. Many of the native gentlemen whose co-operation would be invited are members of municipal or road cess committees, but an invitation to them, because they held that position, I should hesitate to issue. In supervising workhouses and passing the candidates for gratuitous relief, these gentlemen would be most useful. In the interior the main work would fall very much into the hands of one, but in the station the work would be told off to different gentlemen by days.

Mr. Toynbee.—At this stage of the operations (*i.e.*, when the ordinary modes and sources of private charity had become inoperative in the manner described in the answer to question 7, and when it had become necessary for the State to open poorhouses) the duty of the district officer would be to call meetings of the wealthy and influential inhabitants of his district with a view of raising subscriptions to meet the cost of the gratuitous relief given at the poorhouses. The burden of supporting their own poor would simply, by this means, be transferred from the shoulders of those who, in ordinary years, contributed their share of it in proportion to their means, to the shoulders of the richest men in the district. It should be established as a leading principle that all funds for expenditure on purely gratuitous relief should be met by private subscriptions. The supervision of poorhouses might, as far as possible, be entrusted to those who contributed the funds, subject only to inspection by Government officers to prevent abuses. The personal influence of a district officer would always suffice to ensure the hearty co-operation and assistance of local zemindars and others who might, from their position, be safely entrusted with the expenditure of funds entrusted to them. In towns and municipalities, where specific areas, wards, &c., are usually alloted to each member of the municipal committee, this plan would be especially easy and advantageous. But, as said above, strict and frequent inspection, if possible by European officers, would be absolutely necessary to ensure the absence of abuses. Speaking for the district of which I am in charge (Patna), I can state that there would be no difficulty whatever in establishing poorhouses in towns, and also in the interior, without any cost to the State beyond that of inspection; and this could be done by Government officers of all departments under the district officer as occasion might allow.

Mr. Henry.—Accepting the ready-made division of ilaquas, I made a systematic house-to-house visitation, ilaqua by ilaqua, with the view of getting the names of those who were in distress. I soon found that the obstacles to correct classification were numerous and perplexing, and it was then I obtained the co-operation of the more influential native gentlemen. To the number of municipal commissioners were added the names of a few influential residents who, in view of the importance of the work, volunteered their assistance and formed a committee known as the Town Relief Committee.

To each member the ilaqua, or portion of the ilaqua area where he resided, or with which he was best acquainted, was told off. A copy of the list made by me of distressed persons residing in this area was given him, and he was asked to test it.

Meetings were held weekly, and each member stated to the committee the results of his inquiries which were then discussed. The members had many sources of information closed to us officials, and through their instrumentality relief was given in some most deserving cases which could not have become known to me or my salaried subordinates. Families which had become reduced from comparative ease to poverty, but who from feelings of independence and self-respect were unwilling to present themselves as claimants for State relief, had less hesitation in making the urgency of their wants known to their fellow townsmen. The members of the committee inquired into the circumstances of each person whose name was borne on our lists, and placed me in possession of information which caused me considerably to modify and alter the relief registers. Many names were expunged and many added. In the end, I am satisfied that none but those who were in actual distress received relief from us.

With a hastily put together establishment, it was to be expected that cases of fraud would occur. The members of the committee were an admirable check over the small salaried subordinates. Complaints which in any ordinary way could never have reached me were freely made to the members, who represented them to me. I was thus enabled to exert particular watchfulness over any subordinate suspected of malpractices. Finding dishonesty was likely to result in detection, even those predisposed to fraud were less likely to indulge in it. In the municipal establishment I found a ready-made agency to assist in relief work. The assessors and collectors of taxes knew each and all the houses, and furnished me with complete lists of them. They had in many instances acquaintance with the inmates, and were able to give much useful information. By utilizing this existing agency, establishment charges were kept down, and we were better served than by men temporarily entertained, of whose antecedents little would have been known. The co-operation of these members of the committee ensured,—

1*st.*—That only those who were actually in distress received relief.

2*nd.*—That the relief given by the State reached those for whom it was intended without being diverted by dishonest distributors.

The work done for Durbhunga town by the members of the relief committee could in all cases be done by influential native gentlemen. The formation of a committee is only practicable in towns.

To invite the attendance of country residents living at a distance from head-quarters would be to take up more of their time than they are willing to give. But where there are in villages respectable men with local influence, they can be utilized in supervising the distribution of relief, and in reporting on the conduct of the subordinate agency. Reports could be called for from them, and when in the villages the inspecting officer should discuss with them all necessary points connected with relief.

Mr. Metcalfe.—Before distress becomes very general, the organization of municipal bodies may be utilized in dispensing relief; but if the scarcity is widespread, it is more convenient, for the sake of discipline and uniformity of relief, that Government officers should be employed than that the services of non-official persons should be called in, for it is far easier to organize relief through officers accustomed to carry out orders than through outside agency from whom it is always difficult to obtain returns and reports.

Mr. Kirkwood.—In the initial stage of a famine, municipal and local fund committees may be of much use.

Dispensary Committees may be stimulated into retaining the services of extra doctors to peer about in those parts of the district in which severe distress may appear imminent. If these extra native doctors carried with them a packet of drugs and some substantial food, such as any meat essence prepared for soup, they would be of great service. A little strong soup has often, as I have myself seen, a very re-vivifying effect on emaciated frames unaccustomed to so stimulating a diet. It often stops the progress of decline and enables the recipient to summon up energy to recover.

Road Cess Committees may be incited to commence their road operations earlier in the season than usual, to expend more than usual both on their main lines of road and on scattered village works, to turn their attention and their funds to earthwork more than to bridges and masonry, to draw on the surplus savings of previous years.

Municipal Committees may similarly be invited to put in hand any work requiring unskilled labour which would benefit the town, and for which funds are available. But I would not, merely because there happens to be a famine, cause any committee to rush into debt with the object of expending large sums on the relief of the poor by affording them suitable employment, unless that labour is really needed by the committee and they are anxious to secure it. They can only be asked to aid Government to the extent of their available funds, and that in a preliminary way, before Government relief officials have had time to get to work. Anything further than this should depend on whether it would be advantageous to the taxpayers whom the committee represent.

Missionary assistance and the assistance of all other reliable persons, whether official or non-official, whose calling may take them much about the distressed tracts, should be enlisted at this period by advancing sums of Rs. 200 or Rs. 300 from the relief committees' funds to each, requesting them to expend this amount as economically as possible on such cases of urgent distress as may be brought to their notice, and to keep an accurate account of their disbursements. They should also be invited to submit to the district officer short weekly reports of the state of the part of the country with which they are acquainted.

Baboo Hari Mohan Chandra.—The local committees may be made use of in ascertaining the nature of the distress, the state of crops, selecting relief works, and collecting information on similar other matters only.

Baboo Ramani Mohan Chandra.—On the very commencement of the distress particular care should be taken to keep the markets well supplied by importing rice to a quantity estimated to be sufficient to make up the loss of the crop yields, and massing it in convenient localities in the several parts of the district, and disposing of it among small traders to transport throughout the district. This method, without taxing the free course of trade, would materially prevent distress. At the same time, zemindars should be encouraged to import rice, and advances of loans should be given to them where they are willing to take, and exertions should be made to advance money and grain to the ryots, through the medium of the zemindars, large jotedars, and lakhirajdars, who should be made to stand as securities for the advance. In the height of the distress poorhouses or annochhatras should be opened to give relief to those who are unfit for work and who would not at any rate work, such as habitual beggars and helpless women and children. In this stage of the distress, relief works should be opened for the labouring class. In this district the agricultural tenantry would not go to any distance to join the relief works leaving their families and agricultural operations behind. The next consideration should be directed for the organization of relief circles, which should be made in the different parts of the district under competent officers, each comprising an area which can conveniently be supervised by them.

BOMBAY.

Mr. Spry.—Both municipalities and local fund committees can and do assist much in seasons of distress. The municipalities of this district exhausted their resources, and in some instances also contracted loans to enable them to keep up relief works during the late famine. The members of local fund committees are more useful as individuals than in their collective capacity, as they can look to relief matters in the places where they respectively reside. At the beginning of the late famine, meetings were held in each place of any note in this district, and large subscriptions were raised in many places to relieve distress. The leading men formed themselves into committees, and in a most praiseworthy way superintended the giving of relief. In fact for months these relief committees existed till April 1877, and some even after, quite independent of State aid. The only thing to initiate this voluntary movement was for the taluka authorities (the assistant and deputy collectors and *Mamlutdars*) to hold meetings, and to start subscription lists, &c.

Mr. Charles.—Local fund committees are of no use in relief matters. The members live at great distances from each other, and could not be got to co-operate.

Municipal committees are of some use, and might be given work to do, but this depends on the composition of each committee.

The danger of using any such bodies is that they do not understand or appreciate Government rules for relief, and tacitly work against them.

The relief house managed by the Hubli and Gadag native committees got into a state of perfect confusion, the distribution of food being more like a scramble among a lot of wild beasts than human beings, owing to the committees never insisting on any strict procedure, and attempting to give a small dole to almost all who applied, or succeeded in elbowing their way in.

The co-operation of non-official persons is most valuable in bringing to notice cases of distress, house-to-house visiting, &c., but, so far as I have seen, it is worse than useless in any executive work or any organization that requires firmness and the management of bodies of people.

Mr. Percival.—Influential people are very ready to co-operate with the district authorities in organizing relief, and there should be a committee formed in each *taluka*, headed by the *Mamlutdars* and advised by the assistant collector or collector. Municipalities may be utilized, but not the local fund committees as at present constituted.

Mr. Propert.—Both are useful at all stages of distress. As I have before stated, municipal committees should buy grain in the cheapest market, and retail it at cost price. Later on, the same committees, with extra members added to their number from the outside public, can manage charitable subscriptions, invite loans without interest for the purchase of grain, and manage the expenditure and payment, repaying the same when the market becomes easier. They also are available for selecting persons entitled to gratuitous relief. In Khandesh they also superintend the distribution of cooked food at public kitchens; in fact as regards my own province, the municipal committees, where such existed, supervised all details of relief (except public works) in their respective limits.

The local fund committees as a rule cannot be employed to the same extent, as the members are scattered throughout the *talukas* or districts. They can, however, supply work from the funds at their disposal, and to a certain extent supervise the same. If, also, individual members be active and public spirited, they will seek out and bring to notice deserving cases, they will bring those in distress on to relief works, and otherwise make themselves useful; but the local fund committees cannot be employed as agents for relief to the same extent as members of municipalities.

I should never trust much to non-official persons. A few may possibly do good service in various ways. When these few are discovered they may be utilized. Private individuals may be employed as members of charitable committees, supposing them to have assisted in raising charitable funds. The district authorities must not look to non-official persons for any assistance involving regular work or sacrifice of time.

I cannot answer this, as I should never count on active assistance from private individuals.

Mr. Norman.—The local fund committees, as they at present exist, could not be utilized. I explained above (Q. 26, chapter I.) how the services of municipalities might be made use of. In large towns there would be no difficulty in organizing special relief committees, but in every case it should be insisted on that some experienced public officer should have a preponderating influence at the deliberations of the committee. If this be not insisted on, much money will be wasted, and charity will be granted in a reckless extravagant manner.

Mr. Hamilton.—In my experience non-official co-operation would be quite useless.

Mr. Bosanquet.—The opportunity of the occurrence of a famine should be taken advantage of for pushing forward municipal or local fund works of a useful nature. Loans might, if necessary, be asked from Government for the purpose. In later stages of a famine, when private charity is about to become exhausted, it would be right for municipalities to support their own poor who on inquiry are found to have no friends who are able to do so. Independently of such organizations, however, where they do not, influential members of the community should be encouraged to form committees for collecting contributions for relieving the distress, and deciding on the mode of their utilization. Such committees could not be formed without the active assistance and co-operation of the chief revenue officer on the spot. There may be exceptions to this rule, but speaking generally the committees can do nothing without a head, and no one can be that head except the officer representing Government on the spot. There are indeed persons of wealth and influence in most towns of any size, but mutual jealousy and distrust engendered by party feeling would generally operate against anyone being acknowledged to be the leader and chief actor in a great public movement. I have found by experience in municipal affairs that matters will not work well if anyone but an officer of Government is the chairman of a committee.

Mr. Moore.—Municipalities might be utilized to foster the above object, but their funds in this district would be insufficient, and local fund committees could not be utilized; they consist of a few people scattered about a *taluka*.

Mr. Robertson.—From experience I may say that everywhere the municipalities gave great and material aid. In some cases this aid was of the very highest value. The more intelligent of the members formed themselves into a famine committee, and by their influence raised funds and kept down the distress. In one or two municipalities they entirely supported their own poor, and did not, during the whole famine, receive any aid from Government. The local fund committees did nothing, and will, I hold, never do anything in giving aid in a famine.

Not only is it quite impossible to draw up any specific plan to obtain the co-operation of influential people, but any plan, however skilfully drawn up, would, when required to be carried out, be found to be a pretty plan on paper and practically of no value. In

Ch. II. Qs. 9.

Bombay.

this presidency the district officers move about the districts for seven months in the year. They thus know all the influential and well-intentioned people. And a district officer, if he is worth anything, has himself a position and influence amongst these persons.

In the case of the aid of such persons being required, it could best be obtained by the district officer placing himself in communication with them, in some cases getting them to call meetings, and in others himself calling meetings and then framing committees for action. Everything will depend on the men the district officer has to deal with, while the circumstances of the day will have no mean influence on the matter.

Madras.

MADRAS.

Mr. Whiteside.—When matters are clearly becoming serious, the assistance of municipal commissioners and of members of local fund boards may, with great advantage, be invoked to organise a house-visitation in large towns, and to make lists of persons really in distress, as also to supervise the distribution of doles to them. This was the system that was had recourse to during this famine, and it was found to work generally satisfactorily. I do not think it would have been possible to have properly distributed the large sums of money from the Mansion House Funds but for the assistance rendered by these native gentlemen. In this good work many non official native gentlemen also afforded cheerful assistance; but this was only in large towns. Out in the taluks of this district the great bulk of the population are very poor, and there are extremely few large landed proprietors whose assistance can be called in. Not a single one of the great Zemindars of this district took any direct *personal* interest or share in the distribution of charity throughout the famine. Whatever was done by them, or in their name, was supervised by their subordinates; and this extended also to the attendance of Zemindars and Jaghiredars even at meetings of the committees for the distribution of Mansion House Funds. Not one Zemindar or Jaghiredar attended such a meeting in person, but merely sent their dewans or secretaries. They did not even send their sons to represent them. It will, therefore, in the event of such calamity as a famine again occurring, be idle to expect such native gentlemen to take a direct share in the exercise of any scheme of charity.

Mr. J. G. Horsfall.—The municipal commissioners might be utilised in their respective towns. Each commissioner would have a division of the town allotted to him and would, with the assistance of a sub-committee, be able to ascertain correctly the condition and wants of the residents in his division.

Local fund committees cannot be so utilised.

Mr. McC. Webster.—The action of the local fund boards and municipalities should be confined to seeing that at the earlier period of distress their budgeted works were carried on and all applicants for work admitted. Further than this the services of the individual members could not be utilised, and besides I do not think their intervention necessary. The members would, of course, be chosen to act on local charitable committees whenever a subscription was opened later on.

Mr. Grose.—At this stage the organisation of municipalities and local fund boards is of no use as it at present exists in this district.

Mr. Price.—In Cuddapah the vice-president of the municipality, a native surgeon and very intelligent and active officer, aided by one or two of the commissioners, managed, in a very satisfactory way, a feeding kitchen maintained from private funds assisted by a Government grant. This was before village-relief began. After that period the Government officers took over the whole work of relief. If the members of municipal and local fund boards would, generally speaking, take an interest in matters, they might be of great use in looking up cases of distress and pointing out where help was required. I requested one member to assist me in the matter of gosha females in want, and he gave me a return of 1,200; on checking his list by other agency the number was reduced to something like 70, and it was found that the commissioner had put on the list several of his own relatives who were not in straitened circumstances. After this experience I thought it advisable not to make any further attempt to enlist services not tendered.

Mr. Austin.—Municipal committees might to some extent be utilised at this stage, but not local fund committees. In the absence of such bodies private committees might be organised and to some extent rendered useful under the immediate supervision and control of district officers. In the town of Vellore (with a population of about 40,000) a committee composed chiefly of municipal commissioners with a few Europeans and presided over by Major McLeod has worked most satisfactorily in the distribution of charitable relief (Mansion House Funds). A house-to-house inspection was made and inquiries as to the condition of each applicant most minutely held. The town was told off into sections under various members of the committee, and thus the labor of inspection was divided among them. On the whole the system worked well, though unfortunately some grave frauds were committed by a leading member of the committee.

Mr. Soobien.—The services of members of municipality and local fund boards may be utilised in supervising the distribution in towns of Government gratuitous relief when it becomes necessary. But as matters are at present, when public spirit has not developed to any large extent among the leading public men, and when public-spirited men are therefore at a discount, I do not think the gratuitous willing service of the municipal and local fund members for supervision and other purposes can be much calculated upon.

Rev. Newport.—So far as I know this district, this utilisation of non-official help is only possible in the municipal towns and the head stations of the taluks.

Mysore.

MYSORE.

Colonel Sankey.—This question deals generally with the means for utilising all local machinery, and particularly the non-official classes, in suppression of famine. From the memorandum,* which I drew up in anticipation of extraordinary measures being required in Mysore in 1873, and circulated for guidance by order of Sir Richard Meade, it will be observed that the agency proposed to be employed in giving out the local work required was that of "Work Committees," composed of officials and non-officials.

The system here relied on was—judging from the extensive machinery of village, and house-to-house inspection that it has been found necessary to institute in managing the late famine—not only practicable, but capable, when once set on foot, of any desirable expansion. It need not, as suggested in the circular,

* Memorandum on the procedure to be observed in regard to Famine Works—Public Works (Mysore) Circular No. 134, dated 30th July 1873.

have stopped short with Division, District, and Talaq Committees; but, in addition, *Magani* and *Hobli* Committees might be formed for groups of every twenty or thirty villages.

It is universally admitted that, of all classes of native officials, the village *potail* is the man least corrupted by contact with our courts and offices; and as men of this class, with the well-to-do ryots, would be the workers on these minor committees, and are intimately acquainted with the villagers and their circumstances, as also with the earth-work needed in tank repairs, &c., they would prove of the utmost value if called on loyally to perform their duty during famine, and if cheered to the work with the same spirit as if an actual invasion had to be met and repelled.

On the outbreak of famine these committees would soon furnish lists of ryots and invalids, who ought to be encouraged to remain in the villages, and be provided with work there, or be specially cared for; and of the able-bodied labourers and hangers-on, who ought to proceed for employment to any indicated point where work was provided.

These and other details are, however, such as should be elaborated easily by the Civil Officers, who have had full experience of the late famine; but I will not at the same time disguise my opinion that, alongside and in support of these measures, something equivalent to placing a province in a state of siege should be proclaimed and put in force. This measure, and the reasons for it, I ventured to submit for the Chief Commissioner's consideration in Mysore (see paragraphs 46, 47, and footnote, page 5, of Appendices to my *printed Collection*). It would, however, be useless my entering into the matter further here.

Ch. II. Qn. 9.

Mysore

Major Scott Moncrieff.—At this stage municipalities ought to be mapping out their towns and securing the services of volunteer beat inspectors so as to have the famine machinery ready in case it really is required. Registers may be in preparation denoting where distress is likely to occur in the town. The inspector should be found from among members of the municipality. Probably there will be found shopkeepers, employés of Government, &c., who will be content to work unpaid. If there are any native gentlemen of influence resident in the country they should be asked to co-operate, to assist in village inspections, to advise the district officers, to try to induce coolies to go to works, &c.

Mr. Ricketts.—The local fund committee would not be of much use. Municipalities where they exist would be invaluable, and in the other larger towns the amildar could always secure the services of suitable and efficient men. They would collect subscriptions, keep accounts, and supervise the cooking of food and its distribution to really needy recipients.

Question 10.—Village Inspection.

Ch II. Qn. 10.

Have cases occurred in which such measures as those referred to in paragraph 31 of chapter III., regarding village inspection, would properly be introduced during this the earliest stage of distress?

Punjab.—5 officers reply. Opinions divided, but majority think village inspection useful, even in early stages.

North-Western Provinces.—Opinions are divided, but the majority doubt the propriety of village inspection at this stage.

Bengal.—Opinions are divided. Several officers consider the knowledge obtained by village inspection important in the early stages of distress.

Bombay.—Answers unanimous in the negative.

Madras.—16 European and 3 Native gentlemen have replied to this question.

The general opinion is that as regards the sick, infirm, and bed-ridden folk in towns and villages, who are ordinarily cared for by their friends, actual relief at the early stage of distress is not only unnecessary but inexpedient. It is, however, desirable that a register of such persons should be prepared as soon as there is the slightest indication of the distress assuming a permanent character, so that when the time comes for bringing them under State relief, which will be when it becomes necessary to open poorhouses, the measure may be promptly and systematically carried out.

PUNJAB.

Punjab.

Colonel Parsons.—Cases undoubtedly occur in which in early stages of distress village inspection would be beneficial; as regards late distress in this district it was chiefly among persons from Jummoo territory.

Mr. Coldstream.—I believe that when the necessity for relief work arrives, there comes, *pari passu*, a necessity for village inspection; or if not an absolute necessity, village inspection, if then applied, would do some good, and probably prolong *some* lives; but it is always a difficult question whether, with ordinary regard to economy and common sense, the point to begin has arrived.

Mr. Roberts.—Yes, in towns but not in villages. Inspection and inquiry into such cases have been made by individual members of municipal committees, and on their reports the names have been registered. Relief is given to them in cooked food distributed to some child or relative who can come for it, or, if this is not possible, it is conveyed by the committee through their own servants.

Mr. Nicholl.—Cases such as that referred to in paragraph 31, Chapter III., have *not* occurred within my experience.

Mr. Benton.—A commencement was made of preparing lists of distressed people in villages in November last year in the manner indicated above; but no use was made of them, as rain fell immediately after and entirely changed the state of affairs. This was before I joined the district. Possibly in any case the measure was premature, and should only be resorted to when famine has been established for some time.

NORTH-WESTERN PROVINCES AND OUDH.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Sandys.—At the earliest stage of distress the cost of village inspection would not be justifiable. Lives of some of the sick, infirm, and bed-ridden folk might no doubt be saved if the inspectors had power to send all such persons to the poorhouse. The same would also, though in a lesser degree, be the case in an ordinary year.

Mr. Whalley.—I am an advocate for village inspection in the very earliest stage of distress; nothing certain can be known without it. It may be known that causes that must produce distress are at work, but their effects cannot be gauged without village inspection.

As an instance I may mention that in the district of Rae Bareli last January, when no relief works were on foot and the applicants for admission to the poorhouse were few and far between, careful village inspection disclosed the fact that whole hamlets of Lodhas and Koris were dying of starvation, and their condition was wholly unknown to the pargana native officers, and hardly more than suspected in the parent villages half a mile distant.

Mr. Adams.—I doubt if it is the duty of Government to seek out paupers and compel them to receive relief, and I certainly cannot think that any such process is allowable in the early stages of distress.

Mr. Harington.—I doubt if any cases have occurred calling for more village inspection than is compatible with existing means. The *chaukidars* are getting into the way of reporting village distress. A *kanúngo* or other official is, or can be, sent to those villages in which the distress is rampant. To introduce any general system of village inspection, admirable as the course would be on broad principles of philanthropical sentiment, would be the first stage in the general demoralization of the people, would saddle the Government with a burthen it would never perhaps shake off, and would do more than anything else to check the legitimate means of assistance, the workhouse and relief works. People of the class named should be relieved by their own landlords. They should be encouraged to come to the poorhouse or hospital, and every facility given for their transport. The dying who deliberately preferred to die at home should be allowed to die there in peace. The landlords should, however, have pressure put on them to provide sufficient grain for their support, and might be helped by a small grant in aid for the purpose. This kind of relief should, on the part of the State, only be resorted to in cases of extreme necessity and closed as soon as possible, unless the State be willing to undertake the task of maintaining every old crone who finds life a burthen, every cripple who prefers his village to the poorhouse, the sick who will not go to hospital, and the bed-ridden who long to die. If the State be ready to accept this task, it need not wait for a year of famine to commence its operations. The temporary distress is at all times sufficient to provide such objects of its charity in abundance. If, in defiance of economic truths, the State be determined to enter on a philanthropic crusade against want, it might do well to supplement its legitimate resources by an appeal to the benevolent public of England, always ready to back up freely with solid coin the sentiments which it delights to insist on through the public press. Justice to its producers seems at present called for from the State before generosity to its non-producers.

Mr. Blennerhasset.—Cases have occurred in which sick, infirm, cripples, and similar persons have been found on the verge of starvation unable to leave their homes; they were removed to the poorhouses. A certain amount of village inspection appears necessary at this stage.

BENGAL

BENGAL.

Mr. Barlow.—House-to-house inquiries have only been undertaken in my experience after complete arrangements to meet famine have been carried out. It is in fact thus alone that agency for the work is made available. I should, as before suggested, like to see such inquiries made in the worst parts of the country during the earliest stages of distress. Their object in such case would be not so much the granting of relief as the ascertaining the real condition of the people. The difficulty in this direction is want of agency.

Mr. Hodgkinson.—In the earliest stage of distress I do not think village inspection, in order to administer relief to cripples and infirm people, is called for. Private charity will generally maintain such persons up to a much later stage than is, I believe, intended in this chapter. The introduction of village inspection at this stage would involve an amount of cost and labour quite incommensurate with the result, and as tending to weaken and restrict the operation of the sacred duties of charity amongst the people is to be deprecated.

Mr. Toynbee.—I know of no such cases. In the earlier stages of distress it would not be advisable to introduce village inspection. Such a course would lead the people to believe that they were to look to Government only, and not to themselves for help.

Mr. Finucane.—Cases of the kind referred to in this question did, I believe, occur in Tirhoot in 1874. Had village-to-village inspection been begun, and had relief works been fully organized and started at an earlier date, such slight mortality from starvation as did occur would probably have been altogether obviated and the sudden rush to relief works, which occurred in March and April, would not have taken place.

Mr. Henry.—It may happen that in some particular villages the failure has been more serious than over the general area. For them the earliest stage of distress is soon reached. While their neighbours hold, still unconsumed, a portion of the late harvest, they may have entered into the earliest stage of distress and have passed into the stage of actual famine before the general area is seriously affected. To meet a case like this village inspection should be introduced. My experience from village inspection in the famine of 1874 was that the mass of the people appeared to be in good case, with one well-marked exception. I found children at the breast in advanced stages of weakness and emaciation, their mothers appearing to be in normal condition, or at any rate not showing signs of want of food. The only explanation I could get was that all the people had been living on less than their usual quantity of food, and this enforced abstinence had re-acted on the mothers drying up or impoverishing their milk. I believe that from this cause many small children pined away and died. Village inspection in the earliest stage would be effectual in this case also.

Mr. Kirkwood.—As I have remarked at length in replying to question 31, chapter III., the arrangements for village relief should be made at a very early stage when anything like a serious famine is impend-

ing. The evils of a delay in such a matter are abundantly apparent in the history of the Orissa famine of 1866, of the North-West famines of 1860–61 and 1868–69, of the Behar famine of 1874, and, perhaps more than all, of the Southern India famine of 1877. When the main crop is harvested in December and January, the village inspections should be on foot in November, and should be completed in January, registers having been drawn up showing the dates from which needy persons will have to be relieved and the manner in which that relief should be given. The gratuitous method being by distribution of raw food or money at or close to the villages, the first of these gratuitous distributions should be in February, or if necessary, at the end of January. Other relief, such as that afforded by earthwork, should of course have been going on for months before January.

Baboo Hurish Chandra Roy.—Measures referred to in paragraph 31 of chapter III. ought to be adopted during this stage of distress, for, during the late famine, cases occurred of persons of the class named therein standing in need of relief, and suffering from a sad want of food, so long as their cases were not brought to the notice of the relief officers.

BOMBAY.

Mr. Spry.—Cases such as are alluded to in this question have not occurred that I am aware of.

Mr. Charles.—I know of no cases where a search for bed-ridden persons would be necessary in the earliest stages of distress.

Mr. Propert.—No, I have not found that the sick, infirm, cripples, and bed-ridden have come upon our hands during the earliest stage of distress. Such are fed by their friends as long as possible. As regards Khandesh, however, it must be remembered that scarcity only, not famine, existed.

Mr. Norman.—In the earliest stages of distress I do not think that the measures referred to would be necessary. The district and village officers would give timely notice, and the latter should be held personally responsible that no person in their villages is allowed to die of starvation.

Mr. Bosanquet.—I do not think that special measures like those referred to in paragraph 31 of chapter III., regarding village inspection are required in the early stage of distress.

Mr. Moore.—Not to my knowledge, and such steps are, I consider, premature at the earliest stage of distress.

Mr. Robertson.—No such cases have occurred. At the early stages of a famine the people, who are naturally kind and charitable, do not fail to help their poor. When, however, distress becomes keener, then such cases arise.

MADRAS.

Mr. Whiteside.—No. At the earlier stage of a famine there should be no direct interference on the part of the State. Private charity should be left to take its own course unfettered. As soon as private persons see that the State or public charity is prepared to intervene and to assume that duty which they hitherto have unsolicited been performing, the springs of private charity at once begin to dwindle and dry up. Public charity in times of distress should not be had recourse to until it is manifest that the evil has attained a magnitude that is beyond the means of private individuals to arrest.

Mr. Grose.—I consider village inspection by famine inspectors having circles like Revenue inspectors essential from the time that the necessity of having poorhouses becomes probable. Till then the Revenue inspectors and the village corporation will do what is wanted. From these chiefly will come the information as to when poorhouses are wanted.

Mr. Sewell.—I do not think that, in the earlier stage of famine, any special organization is required for this class.

Mr. Martin.—Yes; I think that in some of the worst villages of Pulney Taluq, a village inspection should properly have been introduced if there had been an establishment for the purpose. Their case was met by relief houses, but not so completely as by a village inspection.

Mr. Lee-Warner.—If any thing dries up the springs of private charity, it is Government interference in the villages at this stage.

Mr. Austin.—In my opinion the moment it is an established fact that famine is imminent, village inspection under close supervision cannot be too soon organised.

My opinion now is that there will always be parts of taluks in which matters will be much worse than in others, and that village inspection will be required at a very early stage of a famine in such parts.

Mr. Jones.—I think the classes referred to in paragraph 31 of Chapter III. should be searched out and relieved in their homes at this stage, as it is likely to save much misery and suffering to the poor and much trouble to those concerned in administering State relief.

Major Baynes.—A register of persons capable of labor or permanently or temporarily incapacitated by infirmity or old age or by tender age from earning their own support should be prepared as soon as there is the slightest indication of the distress assuming a permanent character; in fact such a measure is imperative; if deferred till the necessity for affording gratuitous relief has arisen, the distress can never be properly got under control and all measures for relief will become a mere scramble.

MYSORE.

Colonel Sankey.—The "Work Committees" would, as observed, furnish lists of the sick and infirm, and be the best agency for dealing with them, on such principles as may commend themselves to Government. They could also be trusted (always, of course, under proper supervision and check) in bringing to notice the real objects for private charity, and the distribution of such aid of this character as may be feasible and advisable with the available means.

Mr. Ricketts.—In the earliest stages of distress I

Ch II. Qn. 10. — Mysore.

think no such cases as are here referred to have occurred. Assuming that famine in the Bangalore District commenced in September and regularly set it in in October 1876, the need of village inspection only became absolutely apparent in February and March 1877.

Ch II. Qn. 11.

Question 11.—Local Charities for Distributing Food.

What local charities exist in your district for distributing food to the people? Are they appropriated to any particular class, or are they available in times of distress for feeding people of all classes? What is their annual value, and how many people are benefited by them? How are they managed? Could they be made more effectual for charitable purposes in times of famine?

Punjab.—6 replies. Various charities are named, but not of great importance or much general use in famine.

North-Western Provinces.—There are few local charities, but the particulars of such as exist are given.

Bengal.—Very few local charities are mentioned, and these are not of great importance.

Bombay.—Answers are to the effect that there are no local charities, except one or two of very trifling importance.

Madras.—8 gentlemen (Europeans) have replied to this question.

The local charitable institutions are limited in number and means. They are said to be incapable of extension, and would not be of any appreciable benefit in affording relief in times of scarcity. Some of them are then obliged to contract their operations, as they are dependent for their resources on the season's crops.

Punjab.

PUNJAB.

Muhammad Hayat Khan.—A list of charitable institutions in which food is distributed to the people of this district is given below. These institutions are, however, not open to all classes of people, only disciples and followers of a certain religion are fed here. The income and expenditure have been approximately given; it is believed that in time of famine no material help can be derived from these institutions. The income is barely sufficient to bear the expenses of the institutions.

List of Places in which people are fed in the Gurdáspur District.

No.	District.	Annual Income.	Annual Expenditure.	No. of Persons fed.
1	Pindori Mahantán	7,000	5,000	2,333
2	Rattar Chattar -	3,000	3,000	1,000
3	Dera Nának - -	4,000	4,000	1,666
4	Dhiánpur - -	3,000	3,000	1,000
5	Lel - - -	1,000	1,000	333
6	Sum - - -	500	500	200
7	Kot Mián Sáhib -	1,000	1,000	333
8	Ram Tirath - -	500	500	200
9	Gurdáspur - -	3,000	3,000	1,000
10	Batála - -	3,000	3,000	1,000
11	Fatahgarh - -	1,500	1,500	500
12	Tibbi - - -	500	500	200
13	Ghore wah - -	2,000	2,000	1,500
14	Kartarpur - -	1,000	1,000	400
15	Naina Kot - -	1,000	1,000	400

There is one such institution at Bhárawas connected with a temple in charge of a Bairágí. It has an income of Rs. 1,850 a year from maáfi lands, and about Rs. 2,000 from offerings. Fifty or 60 Bairágis are fed every day, but nothing is done towards relieving general distress, nor can any control be exercised over the administration except by inserting conditions in the grants, and if this has already been made in perpetuity, it may not be possible to impose fresh conditions now; but this is a question which the settlement officers may determine.

Mr. Benton.—The *Bhais of* Arnauli and Budláda have established almshouses distributing about Rs. 175 monthly. There are no other local charities. But in times of distress, the municipalities, several of the richer Mahájans in the town, and some of the more prosperous canal villages, distribute alms to a greater or less extent. The monasteries, too (*asthals*), always expend a good deal in charity. I suppose from all these sources some Rs. 1,000 a month may have been distributed during the late distress. There is, as a rule, no restriction as to the class of recipient, save that relief is sometimes confined to travellers, to the exclusion of local paupers. Any attempt at Government interference would probably result in stopping these charities at once.

North-Western Provinces and Oudh.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Colvin.—None in the sense of corporate charities.

Mr. Sandys.—There are no organized local charities in this district for the regular distribution of food to the people. There are some revenue free villages, the profits of which have been assigned for the support of temples or shrines, at which at certain times food is distributed mainly to particular classes, but these profits are not available in times of distress for feeding people of all classes. In the towns, a *chittack* or two of flour or of grain and sometimes pice is distributed by the charitably disposed themselves, or by their servants to habitual mendicants, but it is impossible to say what the annual value of such charities is, or how many people are benefited by them, and in proportion as scarcity increases so these charities lessen.

Mr. Whalley.—A few local charities only and those not permanent ones, exist in the district. The principal ones are at Mainpuri maintained by the Rája of Mainpuri and by Dwarka Dás of Farukhabad at Bhongaon. At both these places uncooked food is daily distributed to a certain fixed limit, not exceeding a rupee a day in value at each. The receivers are generally strangers who on their entering into the city resort to those institutions for relief, but when they stop in the city more than a day they get nothing. These institutions are open through the whole year and cost about Rs. 1,200 a year; from 30

to 40 people are benefited daily by each of the above institutions, and the food is given without any regard to any particular class. None of these institutions are known to have spent more than usual on purposes of relief during the present distress.

Mr. Cornwall.—There are no local charities, unless a small poorhouse maintained by the S. P. G. Mission can be so called. This provides maintenance for about 40 paupers, and there is no room for more. The funds are provided from the Mission.

Mr. Stoker.—The following two local charities exist for giving alms to the poor in the Mirzapur tahsíl only (there are none elsewhere):—

1. At Lohndi, near the city, where there is a temple, tank, and dharmsala. Two and a half pao or ten chittacks of "khichri" (cháwal and dál), some "uplás" (cowdung-cakes) and salt, are given to all poor travellers without distinction of caste.

The trust consists of the interest at 6 per cent. on a sum of Rs. 25,000, and is managed by Bindeshari Parshad, head of the firm of Bholanath Kashinath.

2. At the temple of Mahant Bálkishan Dás in the city. Twelve chittacks of "khichri" are given to all comers without distinction of caste.

Five villages—Korahrá, Bher Patti, and Mahewa, in tappa Chaurási, and Kurkutaha and Kunwar Majhári—are set apart for this purpose, and the entire produce of the sír lands is distributed in charity.

Captain Currie.—The following endowments and charities distribute food to the people:— Ch. II. Qn. 11.

North-Western Provinces and Oudh.

(1.) *Hussainabad.*—Rs. 17,000 in pensions, Rs. 2,000 in blankets, Rs. 1,000 food in Ramzan. During cold season 1877–78, Rs. 300 weekly in doles to the blind, crippled, and aged of Lucknow City. Rs. 500 per month to pardanashins.

(2.) *Shah-Najjaff.*—Pays Rs. 1,000 per month in small pensions to Muhammadan wasikadars.

(3.) *City Poor Fund.*—Rs. 1,098–8–4 per month. Gives indoor and out-door relief to all creeds of poor.

(4.) *King's Hospital.*—Annual income Rs. 14,544, expended in medicines and food for sick poor.

(5.) *Martinière Fund.*—Rs. 265–8–0 per month distributed in pensions to native Christians.

(6.) *New Charity Fund.*—Government grant Rs. 15,000, subscriptions Rs. 9,500, distributed in small pensions.

(7.) *Ruddi-muzalim.*—Capital invested Rs. 5,35,000, yielding an income of Rs. 2,400 per annum, spent in semi-religious charity. This is a private trust fund.

For full details, *vide* Junior Secretary to Chief Commissioner's, No. 3,273, dated 19th July 1872. The attempt made by a committee, of which the commissioner was president and which assembled at Lucknow on 28th September 1877, to exercise a certain control over these charities during the present distress, failed owing to the objections raised by the managers.

BENGAL.

Bengal.

Mr. Kirkwood.—Doubtless local charities for distributing food to the poor exist in many districts, but in only some few of the districts in which I have served can I call to mind any such. I have served in the districts of Hooghly, Cuttack, Bhagalpur, Chittagong, Jessore, Furreedpore, Bankoora, and Moorshedabad. In Hooghly I think there is some such charity from the Mohsin Funds at the Imambara. In Cuttack there is an endowed "Unnochattra," where food is daily, at a fixed hour, distributed to the cripples and beggars of the place, who generally are some 50 in number. In Moorshedabad there is such a charity in the Sen family of Berhampore, another in a wealthy Hindu family of Lalgola, another appertaining to the Paikpara estate, another in the family of Baboo Bijai Gobinda Boral, of Jungipore. These charities dispense uncooked food, together with the fuel necessary for cooking. They are not for any special class, but for all alike. The charity appertaining to the Sen family has an annual income of about Rs. 6,000, and about 30 persons daily partake of the food distributed; the income of the others is not known. Also in the Moorshedabad district, the Maharani Surnomoye, C.I.E., with a regularity which has extended over many years, daily bestows at her family residence about half a pound of uncooked rice to about 2,500 poor persons. There is no doubt that in this latter case the selection of the recipients might, with advantage to the employers of labour and to the recipients themselves, be more carefully made. Besides this, on every *dwadasi*, or the twelfth day of the dark half of the month, the same lady distributes an allowance of one pound of uncooked rice to about 4,000 persons.

BOMBAY.

Bombay.

Mr. Spry, Kaladgi.—There are no permanent local charities in this district for distributing food to the people. The temporary local charities I have already described in my reply to question 9.

Mr. Propert, Khandesh.—There are none worth mentioning in the district. A small fund exists in the town of Dhulia, to which the public and municipality subscribe, but this amount is very trifling, and the object of the fund is to assist the poor in obtaining education rather than the supply of food.

Mr. Ramsay, Nasik. — There is no organized charity in this district that I am aware of, save a poorhouse kept by the Missionary Colony at Sharanpur, near Nasick. It is on a very small scale.

Mr. Norman, Poona.—The only charitable institution in this district is the David Sassoon Infirm Asylum at Poona. It affords relief to the infirm, cripples, &c., in boarding and clothing. The average number of persons aided is about 71. The annual income amounts to about Rs. 3,060, made up of endowments and subscriptions.

Mr. Hamilton, Ahmednagar.—There are no local charities; during the famine a few wealthy *Banias* made presents of grain for distribution to the infirm poor of their villages, but refused to have anything to do with its distribution, which was entrusted to the village officers.

Mr. Bosanquet, Belgaum.—So far as I am aware, charity is given by individuals only, there being no societies or associations for distributing it. The people receiving it are for the most part religious mendicants. Here at Belgaum a certain number of lepers are maintained by the Roman Catholic chaplain from private contributions, and the London Mission from a similar source gives some relief to distressed poor. These

institutions, if such I may call them, are insignificant when the size of the district and its population are considered. I am not aware, however, of the existence of any other institutions of the kind. In time of famine these little institutions might do more if further assisted, but it would not be much. I am told that the native pastor of the London Mission Society at Bail Hongal, a few miles from here, organized a local relief establishment, to which the native community contributed, and that he received and provided for a few orphan children.

Mr. Moore, Satara.—The only local charity that exists in this district for distributing grain to the people is the Frere *Annachatra* at Satara. The charity is confined to the lame, cripples, blind, and other like deserving objects, three times a week. Its annual expenditure is about Rs. 370, and about 75 people are benefited by it. The *Chatra* is managed by a committee. I do not think that it can be made more effectual for charitable purposes in times of famine, owing to its limited funds.

MADRAS.

Mr. Pennington, Tinnevelly.—I annex a statement showing in abstract the number of chattrams in the district with their income and the classes of people who benefit by them. The numbers of those who probably benefited by them can best be estimated from their income. Eight of them are managed by the local fund board and the rest are in charge of private individuals. No doubt the funds might be spent to greater advantage under a better system than prevails in the management of most charitable institutions :—

Class.	Number of Chattrams.	Annual Income.			Number of Men fed.
		RS.	A.	P.	
First - -	4	13,241	0	0	All comers are fed daily.
Second - -	4	4,094	0	2	All Brahmins are fed and conjee to poor daily.
Third - -	12	8,282	10	1	All Brahmins are fed daily.
Fourth -	5	1,520	13	8	Batta, conjee, &c., miscellaneous charity.
Fifth - -	81	31,557	2	4	457 Brahmins fed daily.
Sixth - -	7	704	0	0	53 Brahmins fed occasionally.
Total -	113	59,399	10	3	510
Of this under local fund board -	8	10,567	14	0	
Private - -	105	48,831	12	3	

Mr. Whiteside.—In North Arcot there are very few local charitable institutions. At Vellore and at Arcot there are lungerkhanas which are supported from endowments, the remains of charity of former native rulers of the country. These endowments are very small, and from them a small daily dole of grain is given to a limited number of beggars. The recipients of the dole are chosen irrespective of caste, and are usually deformed persons, cripples from age or infirmity, lepers, blind, &c. There is also the Annadana Chattram at Sholinghur, which from the income of its endowments, provides meals of cooked rice for pilgrims going to and from the temple of Sholinghur Hill. The funds of this institution are not available for feeding persons in times of distress, and this is also the case as regards the fourth and last charity in this district. This is Cunniah Chetty's Choultry at Vadamalpet, in the Karvetnagar Zemindari, wherein a limited number of *bonâ fide* travellers receive a daily dole of food.

The lungerkhana at Vellore is managed by the municipality; a special sub-committee of the commissioners superintend the issue of the dole and give away tickets to fresh applicants as vacancies occur. The income is only Rupees 3,828 per annum, and the number of persons anxious to participate in the dole is always far in excess of its capability. During the famine, in order that more might obtain some small relief, the daily dole of rice was reduced by one-half, and this was also done at Arcot where the lungerkhana is managed by the tahsildar for the time being under the orders of the sub-collector. The income of this institution is Rupees 1,320 per annum. The limited nature of their income and the fact that the recipients of the relief are selected from the very poorest and those most in need of charity whose numbers always far exceed the powers of the charity, prevent any appliance of the funds to charitable purposes in times of distress.

Mr. Grose, Nellore.—The only local organised charity is the Nellore Lungerkhana, the chief work of which is to give cooked food to selected paupers. Its income is Rupees 2,940 per annum. It can only assist in famine operations by becoming the nucleus of a poorhouse, and even that is undesirable.

Mr. J. G. Horsfall, Kistna.—There are about a dozen local institutions at which food is distributed to a limited number and to particular classes. They are unimportant and could not be made available for feeding people of all classes. At the most important one only twelve Brahmins are fed daily; at the others still less. I do not think that they could be utilized in any way.

Mr. McC. Webster.—The lungerkhana at Coimbatore is the only charitable institution in the district which has any organized system. It is managed by the municipal commissioners, and the ordinary income of Rupees 1,200 is devoted to feeding about fifty poor people. It is not capable of extension, and would not be of any appreciable benefit in a time of famine.

Mr. Sewell, Trichinopoly.—We have one local fund chattram at which there is a very small allowance for feeding travellers daily. This amount was slightly enhanced during the famine. In Sriraugam chiefly and in a few of the larger towns there are chattrams endowed or kept up by private individuals at which Brahmins first of all and then a few Sudras are fed daily. The total number of these institutions is said to be 182, and the average daily number of persons fed, 334. I do not think that in times of famine their usefulness can be extended. On the contrary, at such times their means are generally crippled and the distribution of food curtailed.

Mr. Stokes, Madura.—There are seventy-six chattrams in the district designed for the distribution of food to the people. They feed all but very low classes, such as Pariahs, Pullars, Shanars, &c. They are not able to meet the demands on them in famine times as they depend for their resources on crops, and therefore suffer from a failure. They were generally intended for the benefit of the pilgrims to Rameswaram and other places, and cannot, therefore, be made more effectual for charitable purposes in times of famine.

Ch. II. Qn. 11.

Madras.

MYSORE.

Mysore.

Mr. Ricketts.—As now constituted, and with their limited incomes, these charities could hardly prove effectual in times of famine. The principles on which the chattrams exist appear to me to be radically unsound. They encourage a set of paupers, many of whom almost subsist entirely by wandering from chattram to chattram to get their meals. I would abolish them all, and in lieu endow with the funds one large institution to be well managed at the pettah of Bangalore.

Question 12.—Indications of Scarcity having been Under-rated.

Ch. II. Qn. 12.

It is assumed in question 6 that the district officer believes the distress to be temporary, or is not satisfied that it is indicative of approaching famine. But it is possible that he may be mistaken in his appreciation of the facts he at first observed. What indications would lead him to conclude that he had been mistaken and that famine is imminent? What steps should he take to have any such indications brought to his notice? The most obvious points would be such as these: To obtain the best information as to the character and progress of the crops on the ground; as to the prices and the kind of grain exposed for sale in the markets; as to the fullness of stocks in the market and the quarter whence they come; as to police returns of lawlessness and crime; mortuary returns of deaths; reports of deaths by starvation in villages, and more especially roadside deaths; emigration or movements of the people in any direction; sales of ornaments and jewels. Are there any other such indications, and in what way should he secure that such facts should be immediately brought to his notice?

Punjab.—5 replies. Besides the indications mentioned, great activity of local officers in the way of reports and visits is recommended.

North-Western Provinces.—22 answers are given. The points stated in this question are the principal indications of imminent famine.

Bengal.—14 answers. The indications in this question are thought sufficient. Information should be obtained by officers moving about.

Bombay.—7 answers are offered. If the symptoms continue, or if prices continue to rise, crime increases, then expected rain does not fall, and the periodical returns of the people's health become more unfavourable, the district officer would infer that famine is imminent.

Madras.—12 European and 2 Native gentlemen have replied to this question.

Assuming that a district officer may not in the early stage of distress have fully appreciated the gravity of the situation and the imminence of famine, the further indications which would lead him to modify his opinion would be the increased sale and mortality of cattle, the sale and desertion of children by their parents, the receipt into the treasuries of old uncurrent coins, showing that the family hoard had been trenched upon, the flocking into towns of large numbers of emaciated persons, the desertion of villages, the deficient supply of the markets, the fact that the doors and timbers of houses are there brought for sale, the increasing demand for employment, wandering of the people in search of food, and the relaxation of caste prejudices. It seems unnecessary to point out any particular way in which he should secure such facts being brought to his notice, as they are patent to everyone.

PUNJAB.

Punjab.

Colonel Parsons.—The indications of approaching famine are sufficiently fully set forth in the paragraph containing question 12. (*b.*)—With a view to the early receipt of information on all necessary points, village watchmen, police, and *tahsíl* officials, might be required to furnish immediate reports of personal signs of distress; the reports to be in accordance with authoritative instructions for universal adoption in districts, instead of in a desultory and irresponsible manner. *Naib-Tahsíldárs*, many of whom have no judicial or magisterial work, might be required to make periodical tours within the limits of their *tahsíls*, and furnish written reports in prescribed form embracing all necessary particulars.

Mr. Roberts.—Existing agencies, such as village *Chaukidárs*, *Zaildárs*, and police and *tahsíl* establishments, are sufficient for securing accurate and early information on all the points noted, except sales of ornaments and jewels, and stocks of food grains on hand, and these are not easy to ascertain, as pawnbrokers and grain dealers consider secrecy essential to the success of their dealings, and are always jealous of an inquiry.

In districts where trade is active, from all parts of which a railway is accessible, the quantity of grain in store will always depend very much on the prices ruling in other parts of India, and the course of traffic in grain will always be a good index of the condition of the district. So large a proportion of the cultivated area also is dependent on rain, that a general idea of the quality of any coming harvest may always be formed by watching the rain-fall.

CH. II. QN. 12.

NORTH-WESTERN PROVINCES AND OUDH.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Sells.—I am not aware of any indication of grave distress portending famine beyond those noted in this question, setting aside the condition of prices and scantiness of supplies in the markets, I should hold emigration to be the surest sign of actual famine. The increase of crime would be another of the most important indications. Reports of deaths of actual residents of the villages would show severe destitution, but they would give no information as to the distress being merely temporary or not; and it will often be the case, I apprehend, that actual starvation has not been the cause of death, but rather disease or exposure acting upon an emaciated body. Roadside deaths will not necessarily tell anything as to the extent of distress in the districts itself; as often as not the people dying will be beggars from other districts. Extensive sale of ornaments certainly tells of very severe pressure, which, however, still may only be temporary. This last indication is one that is not readily secured, and I am not prepared to say how the district officer is to ascertain such increase of sale, except *vaguely*, and by *general* report received from the various officials in the district. A fair general impression may, however, be gained. The other points are more readily ascertained. The village *chaukidars*, headmen and patwaris should be required to bring to the attention of the *tahsíli* and police officers any such facts, and intimation of them should, by the latter, be promptly brought to the notice of the district officer.

Mr. A. Colvin.—The last part of this paragraph mostly answers the first. The further indication by which I should judge would be the prospects of the food crops in other parts of the province, and the growing pressure of the local demand for employment.

Mr. Sandys.—A steady rise in the already high prices, increased demand for employment, knowledge that the crops had failed and that the prospects of the future crops were bad, numerous applications against the grain dealers for refusal to make their ordinary advance of food, constant complaints that the villagers had refused to allow of the export of any grain from their villages, would indicate that famine was imminent.

BENGAL.

BENGAL.

Mr. Barlow.—The list of indications of approaching famine given in this question appears correct and complete. I cannot add to it. I can only say, thinking of my own experience, that I should deem any officer fortunate who, face to face with the uncertain conditions of distress and famine, has early in the day a reasonable number of these clear indications set before him upon fair and reliable information. He should be able to decide what the prospects really are promptly and without misgiving, and take measures accordingly.

I think, however, that the most important view connected with this branch of the subject is the following, viz.: How is the district officer to judge between temporary distress and famine in the actual absence of, or when he is unaware of, the existence of such symptoms as those described? The Orissa famine was a real calamity beyond dispute, and the indications almost certainly must have been present. Yet they were not known to officers most anxious to discern them. Such failure must be attributed to defective information, and its recurrence is only more or less capable of being guarded against. New difficulties, however, meet us in the way. In 1873–74 the determination of the policy to be adopted was arrived at so early that there was not time for the appearance of some of the most important indications noted. There was of course a reason for this haste connected with the important question of grain importation, but the effect was the same, that the complexion of the famine had to be determined before the symptoms were fully developed. So, again, the definite instructions that relief shall be given to the people in an organized form before they are reduced to a generally deteriorated state, tend to throw back, if they may not altogether obliterate, the appearance of these real famine indications. Really effective relief, administered according to the conditions contemplated in questions 6 to 9, might keep off any great increase of crime or death, and might check emigration and the sales of property, &c. In this manner an officer dealing with distress as temporary might advance far into real famine without warning. The whole subject of indications and the use to be made of them hangs greatly upon the policy which Government may determine to follow in connection with distress and famine. If it decides that, regardless of expense, not a life is to be lost that could be saved "by forethought and management," then the appearance of these indications of real famine cannot always be waited for, and extensive preparations must be made which may afterwards prove not to have been needed.

On the other hand, if indications may be waited for, a certain amount of loss of life is unavoidable.

I cannot suggest any special measures for bringing facts and indications before the district officer. All know the value of ascertaining these, and will ascertain them to the best of their ability, if action is not forced upon them in too hurried a manner. Agency is the difficulty here again. Native report, especially if the idea of relief gets abroad, is simply confusing and misleading.

Mr. Worsley.—The only other indications of imminent famine would be (1), a deterioration in the physique of the people; (2), increased applications for employment on works *at the ordinary rates*; (3), the continuance of drought. By requiring the officers in charge of sub-divisions, thanas, and works to submit weekly reports, and by constantly moving about his district, the district officer would be kept regularly informed of all matters that could throw any light on the extent or character of distress.

Mr. Magrath.—As I have already stated, it is of course possible that any forecast may be upset in a hundred ways. The mere cessation of the rains a fortnight earlier than usual may and has converted a scarcity into a famine.

It is impossible to say what would first lead him to know that famine was imminent, but any man who knows his district would see it in a hundred ways. The character and prospects of the crops on the ground he would, as I have shown, know; the kind of grain for sale the district officer would partially know, but the prices would be often difficult to ascertain in places where there are next to no markets and no traders; the whole work of carrying away the surplus produce being done by foreign bepari's. As to stocks, under the circumstances I have mentioned, the district officer could only find out what came into the towns and very large villages, but the great point—what surplus stocks are in the hands of the cultivators—he would not know and they will not tell. Returns of grain thefts are very illusory. In the Mudhubanni Sub-division, where the famine was worst, there was little crime, whereas in the north of Bhagulpore adjoining, where there was but little famine comparatively, robberies and thefts were plentiful. Mortuary returns are apt to be very illusory in famine time.

Deaths of starvation in villages are never reported as long as the zemindar can keep them quiet, for fear of his being called upon to support the poor. Roadside deaths are an indication generally, but their absence is no proof of the absence of starvation, nor does their presence show that the starvation is the result of famine in the locality where the corpses are found. In the famine of 1866, long before there was any scarcity in the Burdwan District, corpses were daily to be seen by the roadside of people who had straggled up from Midnapore. The people do not generally begin to emigrate or move in large bands until there is no food obtainable. When food begins to fail they straggle off in small parties in search of work, knowing that a few are more likely to pick up a living than many. "Sales of ornament or jewels," this should have read "pledging or pawning," as the jewels are very seldom sold out. This is illusory as a test, as such pledging takes place in any bad year, in order to get advances to carry the family on; but a sure test is the sale of the brass vessels, which are always the last thing parted with. Besides this, as I have already stated, distress amongst the weavers, lac ornament makers, and village carpenters, and the like, is a certain indication of such failure of the crops as to make famine, not scarcity, certain. The facts are certain to come to notice through the police and the other officers moving about. There has been no case in which the local authorities have been unaware of the prospect of famine that I am aware of.

Mr. Hodgkinson.—The most certain indications of distress ripening into a famine would be—

(1.)—Scanty and ill-distributed falls of rain at agricultural periods.

(2.)—Concurrent rise of prices in the district and districts from which it imports.

(3.)—Large accession of numbers to the relief works already opened.

Provided that only ordinary wages are given, I regard the last as a very good test indeed of the necessity of an extension of relief operations not only in the direction of opening more works, but in providing more poorhouses when there is no immediate prospect of relief by a supply of field labour, or of food, and eventually if prospects do not improve of organizing village relief. If persons come to labour for a wage which in famine times barely suffices for their own subsistence, it is evident that the weak and infirm of their families cannot be provided for by them. With regard to the points mentioned in the question, I note briefly the extent to which information in regard to them is obtainable with the existing district organization.

(1.) *Information as to Character and Progress of the Crops on the Ground.*—In a general way this information is readily obtainable from official as well as from non-official sources.

(2.) *Prices and kind of Grain exposed for Sale in the Markets.*—Information on this point is usually supplied for the larger markets at least. There would be no difficulty in obtaining it also for the smaller hâts which are held once or twice in a week, and are the real markets of the country people. A comparison between the prices ruling at the large bazaars and those at the hâts would be most suggestive at critical times.

(3.) *Fullness of Stocks in the Market and the Quarter from which they come.*—Our information in regard to stocks is lamentably deficient. I have already made suggestions in this matter (question 1). In regard to the larger markets we have some information as to the direction from which supplies are received, but at a slight expense it may be very much increased.

(4.) *Police Returns of Lawlessness and Crime.*—These are of course available.

(5.) *Mortuary Returns of Deaths.*—In this district so little progress has been made in obtaining correct statistics that at present only the most fallacious conclusion would be derived from them.

(6.) *Reports of Deaths by Starvation in the Villages and more especially Roadside Deaths.*—Roadside deaths would be almost invariably reported; of deaths by starvation in villages I am not certain that correct reports would be made.

(7.) *Emigration or Movements of the People in any Direction.*—Emigration for a time to East Bengal goes on annually. Local inquiries by Government officers from landholders and others will generally show whether in any year there are more emigrants than usual. In the past year the number of emigrants from Sarun has been unprecedented. They go in October, November, December, and return in May and June.

(8.) *Sales of Ornaments and Jewels.*—On this point we have at present no means of information beyond general rumour.

BOMBAY.

Mr. Spry.—The indications which would lead a district officer to suppose that he was mistaken in the temporary nature of the distress would be,—

(*a.*) The failure of the rainfall at the time expected, for instance, if the distress began in April, and the south-west monsoon did not bring the usual amount of rain in June.

(*b.*) The continually increasing demand for relief.

(*c.*) The prices of grain rising.

(*d.*) The increase in crime, such as grain riots, dacoities, robberies, thefts, &c.

On these points, and the others noted in the question under reply, he would keep himself informed by daily reports from his subordinates in all parts of the district.

He would also ascertain the prospects and present condition of surrounding districts, and form his opinion thereby.

Mr. Propert.—The ordinary district and village system of administration in the regulation portions of the Bombay Presidency fully ensures every point of interest regarding famines and other unusual occurrences being brought to the notice of the district officials. The indications enumerated in the question embrace, I think, all points likely to arise in connection with an impending or existing state of famine.

Mr. Ramsay.—As I have already stated above, I do not see how a district officer of ordinary intelligence and vigilance could make such a mistake. As an instance, I am now in receipt of daily reports from each taluka in my district. Everything bearing on the condition of the people is reported to me. I do not believe a single death, save from pure natural causes, could occur without my knowing it within 48 hours at latest. I cannot say more than this. I instituted these daily reports because the prospects of the rainy season at first were unfavourable.

Mr. Norman.—In my opinion it is impossible that a district officer can be mistaken as to whether distress is likely to be permanent or temporary. If the early rains alone fail it may be only temporary, but if the later rains also fail, the distress must continue until next harvest. The collector of a district is always in possession of every possible information regarding the state of his charge, and he should have no difficulty in drawing his own conclusions.

Mr. Bosanquet.—I presume that the continuance of the causes which led the district officer to appreciate the first appearance of distress, although he might think it to be temporary only, would satisfy him that

CH II Qs 12.

BOMBAY.

he was mistaken in his first impression, and that famine was really imminent. Those circumstances might be continued drought, or the failure of the late crops as well as of the first, the continued demand for labour by persons in distress, and the increasing number of persons demanding charitable relief. These things would come to his notice in ordinary course, and would not require any special steps to be taken in order to his becoming acquainted with them. Information regarding the crops, regarding the prices of grain in the markets, and regarding crimes and offences are brought to his notice as a matter of course in all times. Information regarding the other points noted, could of course be demanded. Such information was periodically obtained here during the continuance of the famine. Information on all these points would be that most required, and it does not occur to me to suggest any other.

Mr. Moore.—I can add nothing to what I have written above. If the reports showed me, and if I observed that distress was becoming general, I should organize strict village circle and house-to-house inspection, and thus secure that all facts should be immediately brought to my notice.

Mr. Robertson.—It is assumed only in the first two and a half lines of question 6 that the district officer believes the distress to be temporary. Question 6 then branches off into other points, leaving aside the above assumption. As noted by me in answering other questions, the regular returns the district officer receives of the rain-fall, condition of crops, and health of the people and their condition, will not for a moment allow him to be unaware whether famine is imminent or not.

I have no reliance on any information obtained as to stocks in the market. The returns of the state of crime are weekly placed before the collector and magistrate, and by him sent on to the commissioner. Emigration during the cultivating season is a sure sign of approaching or much apprehended distress. Sales of ornaments and jewels do not take place till the pressure of a famine is unmistakably severe. Deaths from starvation in villages or roadside deaths cannot be considered as indications that a famine is imminent. We ought to and should know the state of the country long before these could happen. Such deaths would be signs that there was either some fault in our famine arrangements, or prove that some one had to be taken to task for neglect.

MADRAS.

MADRAS.

Sir W. Robinson.—On the assumption of this question the district officer had better be removed—such was the experience of Madras administration—because while he is blundering the people are dying and irremediable confusion is arising.

Mr. Whiteside.—The various points specified in this question may all be regarded as indications of impending distress, and should be quite sufficient to put an officer on his guard. There is one fact that I noticed in connection with this famine, which I regarded as a sign that the distress had reached persons not of the poorest class, and that was the receipt in the treasuries of ancient uncurrent silver coins in considerable numbers. Many of these coins were quite clean and bright. They had evidently been hoarded carefully and had hardly, if at all, been in circulation. The parting with these little treasures must only have been decided on when distress was being keenly felt by the owners. For there was nothing so marked throughout the famine as this propensity of the natives to save money by hook or by crook. Even paupers who died in the camps from emaciation, or the other ailments induced by continued privation, were very often found to have rupees concealed on their persons. This was the case amongst the very poorest of the people. The hoarding of ancient coins is a weakness of natives of the higher classes, and the voluntary surrender of what they undoubtedly had kept stored away for many years must only have been made when they were sorely pinched for ways and means of existence.

Mr. J. G. Horsfall.—Clause II.—The weekly reports already referred to above—Question I.—checked by personal inspection should afford him immediate and ample notice.

The sale and mortality of cattle as well as of men, difficulty experienced in collecting the usual kists, desertion or sale of children, increase in number of persons asking for food, and the flocking into towns and villages of bodies of emaciated people, are all indications which should be noticed in the weekly reports.

Mr. Price.—The indications named, with the addition of continued falling off in the condition of the people of the district, and increased applications on their part for work and relief, are those which ought to very soon show a district officer his mistake. The obvious means for securing this information are to move about himself, keep his officers moving and sending in weekly reports, and where things are said to be in a bad state, going to see for himself. No system of reports will ever give the information to be gained by keeping on the move.

Mr. Grose.—I believe the points enumerated in the question are the chief points to which the district officer's attention should be directed; but, as I have said, village inspection should be organised at an early stage.

Mr. Lee-Warner.—In nearly all parts of this presidency there are established weekly fairs so arranged that in turn at one centre or another of every ten miles within the district there is a weekly market almost every day of the week. These weekly markets afford very valuable indications of the progress of distress at this stage, as not only do the inhabitants of all the neighbouring villages come together of their own free will and much can be learned from their appearance and the cloths the women wear, the latter wearing their best at these meetings; but there is also an opportunity of judging from the articles brought in for sale, other than grain and cattle, such as doors, door-posts, old thatching, &c., and the prices which such articles fetch, how deep the distress has penetrated into the homes of the poor. While I was on famine duty, I never neglected the chance of pitching my camp near the place of such meetings, and during their course I always mixed in the crowd to observe these indications myself. It takes a good deal of driving to make a Revenue native official see the uses of this sort of inspection.

Mr. Austin.—I do not think it possible for a divisional officer to mistake the signs of approaching famine. Continuous drought accompanied by mortality among cattle, a steady rise in the prices of food grains, reports of desertion of small ryots and coolies from certain villages, increase of crime, in larger towns rumours of grain riots, increase of deaths: all these are facts that must come to the notice of a divisional officer, and from which he may easily predict with tolerable certainty the chances for and against a famine year. With regard to the actual state of the country a divisional officer must learn this by steady touring through his taluks. The village officers are always ready to give information, although at the same time

they are naturally prone to exaggerate. It is, of course, to the interests of the people to make matters out worse than they really are, and their representations must, therefore, be taken *cum grano*. A little care in sifting their statements will, however, generally enable a divisional officer to form a pretty accurate estimate of the real state of affairs.

Mr. Weekes.—The greatest and most certain indications of all, and which should at all times be carefully looked for, are emaciation, recourse to wild berries, leaves and roots, wandering in search of a better land (like the sons of Jacob going down into Egypt because *they heard* that there was corn in Egypt). CH. II QN. 12. MADRAS.

MYSORE.

MYSORE.

Mr. Ricketts.—A district officer would very soon find out his error if he made the mistake of confounding temporary distress with imminent famine. Most of the indications which would lead to the conclusion of impending famine are clearly given in the present question. A few more might be added, such as selling straw, the mainstay of an agriculturist as regards his cattle, at extremely cheap rates. Fowls selling for a mere song. Ditto cattle and sheep. Mutton and beef going down to half its usual price, and so on. People sell at these cheap prices virtually in order to save life, though of course after a time there is a reaction; prices go up again, and reaching their former level, recuperate themselves by, say, going up an extra 50 per cent. where they had previously gone down 50 per cent. Less consumption of toddy and arrack also takes place, and lastly the sufferers crowd round the district officer in his tours and tell him their wants and fears. There can be no mistaking what their terrified look, voice, and even tears indicate. All the above the district officer can easily learn from his office accounts and personal observation. Amildars, too, at such a crisis are not backward in writing full reports of the state of their taluks, and giving expression to their own views. Lastly, the district officer and his assistants at this time go touring, and from his own observations and the demi-official communications of his assistants, the district officer gets early and accurate information on all necessary points.

QUESTION 13.—INDICATIONS OF DISTRESS HAVING BEEN OVER-RATED.

CH. II. QN. 13.

On the other hand, the distress which the district officer has held to be serious, though temporary, may turn out to be so slight as to require no special measures of relief. What are the indications which would lead to the conclusion that this is the case: and what steps should he take when he comes to that conclusion? Are any precautions requisite to guard against an erroneous estimate of the necessity for offering relief other than those which are supplied by the application of suitable labour or other tests?

Punjab.—4 answers. Opinions as above.

North-Western Provinces.—19 officers answered. The opinions are the same as those offered by the Bombay officers.

Bengal.—12 answers. The opinions are generally the same as those above.

Bombay.—7 officers answered this question. The passing away of distress will be shown by the people leaving the works and ceasing to apply for relief. They will go off the works themselves when the prospect brightens.

Madras.—10 European and 1 Native gentleman have replied to this question.

A district officer is far more likely to be led into a mistake of this sort than into one of the nature indicated in the previous question. When rain and prices fall, and people begin to leave the poorhouses and relief works, and agricultural operations are resumed, matters are on the mend. A strict enforcement of the labour and wage test will generally suffice to prevent abuse.

Mr. Weekes points out an important distinction between the indifference of people to employment when they are in fair condition, and prospects are improving, and the same indifference when they are feeble and emaciated from famine.

PUNJAB.

PUNJAB.

Mr. Roberts.—Under the circumstances described, relief works, if started, should be closed, and gratuitous distributions of food should cease. If care be taken not to make the works too attractive, and to give only a bare subsistence allowance in poorhouses, and to exact even from the old and infirm such light labour as they may be capable of, the people will not be slow to abandon the works, and leave the poorhouses as soon as easier times admit of their getting a living otherwise. When this occurs, and petty offences against property diminish, and emigrants begin to return to their houses, it may fairly be assumed that the distress, which seemed likely to be serious, is disappearing.

NORTH-WESTERN PROVINCES AND OUDH.

NORTH-WESTERN PROVINCES AND OUDH.

Mr. Sells.—Steady prices, improving weather prospects, the promise of some portion of the harvest being secured, may be accepted as signs that distress, unless influenced by causes working outside the district, such a great demand for food grains in other parts of the country, will be but temporary. The utility of smaller "test" works are here useful, as showing how far there is actually a demand for work, and how far "special" works on a large scale may be necessary. It may be taken as an axiom that wherever severe distress exists

CH II. QN. 13.

NORTH-WESTERN PROVINCES AND OUDH.

there will be a demand for work, and relief works will attract even at subsistence wages, and I am not aware of any other good test than this.

Mr. Colvin.—They are not very easy to decide. The reverse of the unfavourable symptoms noted in the last question would be the most obvious indications. An unwillingness to remain on the works at a low but sufficient rate would be a good sign that pressure was not serious; and if the food supply elsewhere promised well that pressure would soon pass away altogether.

Mr. Sandys.—Such a misapprehension is not likely to arise, unless a sudden improvement in the prospects of the ensuing harvest were to occur in consequence of an unexpected fall of rain. Under these circumstances, if the wages given at relief works were in reality a mere subsistence wage, the applicants for employment would rapidly leave the works; and if the rule as to residence in the poorhouse were strictly enforced, the paupers there would be almost as anxious to return to their homes as the labourers. It would then be time to close all relief works and to keep up the poorhouse only as long as the numbers there were not more numerous than would come in an ordinary year, and the prices of food remained so high as to render their death from starvation probable if they were at once to be discharged.

Mr. Tracy.—If the district officer has held the distress to be serious he will have made provision for relief works and poorhouses. If he finds that the people will not come to these, or if, having come, they desert them, he can have no better assurance that no real distress exists. The only satisfactory test of distress which I know of is the experimental one of opening works at bare subsistence rates.

Mr. Cornwall.—The reverse conditions to those specified in the answer to question 12 will apply here. The people do not seem to care to remain on a relief work when there is any prospect of being able to subsist at their usual employment. When the district officer is satisfied that there is no serious distress, he should reduce the amount of wages paid for each task, which will probably have the effect of sending to their houses all who can obtain a subsistence on as easy terms. The plan was tried last year on the Mogal road and approved by Government, and shortly afterwards it became obvious from a simple inquiry into the place of abode of the remainder that nobody thought it worth while to come to the work who could not return to his comfortable home at night, and the work was then stopped. The labour and other tests usually applied seem to afford sufficient precautions.

BENGAL.

BENGAL.

Mr. Barlow.—With relief under anything like control there should be no real difficulty in deciding when special measures may be put a stop to. If numbers do not increase, or in face of the tests, people refuse relief and go away; if the general tone and appearance of affairs does not get worse or even improves, it will soon be known that relief is not required to be continued. In practice small relief works have been constantly opened, and no difficulty has been experienced in closing them. All except professional beggars gladly go away when their necessity ceases; and for the beggars, it is sufficient, as soon as things seem to have resumed their normal condition, to close the relief places, and they disappear.

Mr. Worsley.—The indications which would lead the district officers to the conclusion that he had overestimated the character of the distress would be (1), steady falls in prices caused by importations of grain; (2), desertion of ordinary or special works; (3), the fall of seasonable rain, enabling the people to resume their ordinary agricultural operations. On coming to such a conclusion the district officer should diminish the number of works.

Mr. Magrath.—I have no experience of distress turning out less than it was expected, nor should I suspect that the indications of such an occurrence would have any great effect upon anyone who predicted a famine when only a slight scarcity would occur.

Of course there are occasions when the district officer has to report (as happened in August and September 1874) that any further break in the rains would cause a total failure of the coming crop, and when his prediction of total failure would be falsified, as it was then, by the rainfall on the 15th of September. But in all cases of this kind it is necessary to have a margin, and nothing could be more foolish than to find fault with an officer's estimate of his requirements, because at the close of relief he may have 10 per cent. or so of his grain still in hand. The ordinary tests are to my mind quite sufficient to send the people off the works.

BOMBAY.

BOMBAY.

Mr. Spry.—The indications which would lead a district officer to conclude that he had been mistaken in his anticipations of serious, though temporary distress, would be a diminution in the numbers applying for relief on works or otherwise, and by those already on relief going off. The works might then be thrown open to all comers, and then if the numbers did not increase, or only increased by the coming on of people such as *wadars* who usually gain their living by labouring on public works, it might be reasonably concluded that the necessity of works, as relief works, had passed. The works might then be carried on as ordinary ones, or gradually closed by concentrating people from several works on to one or more. I am not aware of any precautions requisite beyond those of suitable labour and other tests.

Mr. Charles.—The lowness of wages and the distance test are all that is necessary to drive away persons not in need of relief; if these are strictly enforced, the district officer will very soon find out, by all his labourers leaving the works, that the distress requires no special measures of relief. No other tests seem necessary.

Mr. Propert.—A district officer must, as I have repeatedly stated, act according to circumstances. No man of experience would start works or measures of relief until he had satisfied himself that real need for the same existed; according to the Bombay Regulation System, a collector of a district daily corresponds with subordinates in every portion of his charge. The very best information is therefore available at any moment. This and many other questions do not seem applicable to the Bombay Presidency. If real distress, temporary or permanent, be observed, small works affording a bare subsistence only should be opened. If distress cease, the labourers will most assuredly quit such works at the earliest possible opportunity. If gratuitous relief has been established, a mere glance at the market rates of food will enable an officer to say whether such relief should or should not be discontinued. Where such relief is first discontinued a few complaints may possibly arise, but these disappear

very quickly and things resume their normal condition. I cannot think it probable that in the Bombay Presidency any difficulties such as those hinted at in this question are likely to arise.

Mr. Norman.—I do not think the difficulty referred to in this question is ever likely to occur. It has been found that people leave relief works as soon as they have a chance of supporting themselves at their own homes. It is more difficult to clear the poorhouses, which are crowded with infirms and cripples, but they also show but little inclination to stay if they have an opportunity of returning to their homes.

Mr. Bosanquet.—On the distress diminishing the district officer could not help becoming aware of the fact, as I know from my own experience. The demand for labour and for gratuitous relief diminishes, the prices of necessaries of life go down, and cheerfulness takes the place of despondency among the community.

Mr. Moore.—If I found from the reports of my Mamlatdars, chief constables, general duty *karkuns*, schoolmasters, and sub-registrars, who would be warned to keep their eyes open, that there were no cases of actual distress in villages, and that people when advised to go on works and earn wages declined to do so; if I found that people did not wander and that beggars did not increase and that prices did not rise, then I should consider that no special measures of relief were necessary.

I can suggest no other precautions than strict orders to all my subordinates to be most careful to guard against enormous estimates of the necessity for offering relief.

Mr. Robertson.—If happily by the blessing of Providence, after distress has appeared to be serious, rain falls, and the danger is averted, our weather reports and the reports on the condition of the people and the progress of agricultural operations enable the district officer to see that distress is averted. Works that are open will without pressure be deserted by those who desire to go to their fields. Thus numbers on relief labour will decrease. Gradually, as the prospect becomes better, the stronger may be sent from the relief camps to their homes, but all this time vigilant circle or village-to-village inspection must be maintained. When the registers show that there are very few requiring relief, then the villagers and townspeople may be called upon to support their own poor according to old custom.

MADRAS.

Mr. J. G. Horsfall.—A good fall of rain, the commencement generally of agricultural operations accompanied by a fall in prices and the desertion of relief works by the people and their return to their own villages would sufficiently indicate the non-necessity of continuing relief operations which should be closed.

Clause II. — A special commissioner might be deputed to visit the district and ascertain, by personal inspection and inquiry, that the views of the district officer were not exaggerated.

Mr. Whiteside.—When famine works have been opened by Civil Agency, and the gangs do not fill; when the people who have no work to do in the fields will not accept the aid offered by the State either on the works or in relief camps, but prefer to loaf about and beg, the district officers may safely conclude that distress is not severe or likely to be permanent. By the careful application of the distance, labour, and wage tests, I consider that a district officer can guard himself completely from an erroneous calculation of the necessity for relief, and I would suggest no others.

Mr. Price.—The first indication after those afforded by the weather would be the people quitting works, unwillingness to go to poorhouses and anxiety to get out of them, a fall in prices, and an improvement in condition of the masses. The people will seek and remain on village relief long after any necessity for it exists. There are persons who can support themselves otherwise, but who will remain on works in order to make a little money whilst the crops are growing; and to get rid of these I would at this period follow the course generally adopted in the Cuddapah District of, when times show decided signs of mending, turning off all coolies in good condition.

Mr. McC. Webster.—A fall in prices and increased cultivation, &c., decreasing number on works, decreased crime and wandering when the district officer comes to the conclusion that no special measures of relief are necessary, any special works opened, and the poorhouses should be closed. The ordinary works, if the budget allotments have not been worked out, should be kept open at the reduced rates of wage for some time longer until it is shown that the people will not come on the lower rate of pay. If the budget allotments have been worked out, it would be necessary to keep on the special works for a time, until they are no longer resorted to by any considerable number of people, but the poorhouses should be abolished.

Mr. Weekes.—Refusal of the distance, labour, and wage test when the condition of the people is manifestly not low, especially when there are good crops coming on and prices are falling. This indifference to offers of employment in scarcity must be very carefully distinguished from similar indifference during famine, when the people refusing are terribly emaciated, and are living on wild berries and leaves, and are especially during the rainy season extremely unwilling in their feeble state to leave the shelter of their homes and go to distant works. This is not the indifference of men who require no assistance, but the listlessness of despair and of extreme feebleness and sickness, so often observed as a famine symptom. I observed it in Kurnool in July and August 1878, and I should be inclined to think hundreds died in consequence of it. Distance tests and labour tests and closed camps in such times for such people are baneful in the extreme.

The other precautions necessary constitute the most difficult part of the relief officer's business and requires far more local knowledge than he can possibly possess or acquire. He must call in the aid of village magistrates and others who have the knowledge, and how to extract that knowledge is a difficult matter requiring both tact and sternness. These men alone can tell who of the non-emaciated can support themselves. The emaciated necesistate no inquiry.

MYSORE.

Mr. Ricketts.—In the case here put, the sooner the district officer admits his error the better; but I do not see how he could fall into such a mistake. Most, if not all, the indications noted in the preceding paragraph would be wanting. But few people, and those only of the ordinary labouring classes, would resort to the relief works if any had been opened, and if the wage were low and fair labour exacted, even the number of these "coolies" would very shortly sensibly diminish. Further, all the surroundings would indicate the real state of affairs, and the district officer would only have to close his special relief works.

The danger of falling into the error contemplated in this paragraph is very small; but there is the real and I think, frequent danger of assuming that because certain relief works are not at once readily resorted to, therefore there can be no very great distress, or at least that sufficient work is available elsewhere.

CHAPTER III.—REPLIES.

FAMINE RELIEF.

N.B.—In answering this and all other questions in this chapter, remember to draw the distinction (where necessary) between the three periods of Famine, its beginning, height, and decline, and also between Public Works Department and Civil relief-works.

It may be assumed that the State is responsible for offering the means of support to all persons not able to provide for their own maintenance during time of famine, subject to the imposition of such tests as will prevent relief being given to persons not really in want, and will protect the public finances as far as is practicable. The method of affording direct famine relief to persons in want in time of famine hitherto adopted by Government are :—

(1.) *Relief given, subject to a labour test, or in return for labour.*

(2.) *Gratuitous relief, not subject to any labour test.*

Relief work may be divided into that which involves—

(1.) *Unskilled labour, commonly earthwork.*

(2.) *Skilled labour for artisans.*

Gratuitous relief may be divided into—

(1.) *Relief given at poorhouses.*

(2.) *Relief at home.*

SECTION 1.

CH. III. QN. 2

QUESTION 2.—PUBLIC WORKS DEPARTMENT AND CIVIL AGENCY WORKS.

The first division of relief-works for unskilled labourers may be into works supervised by officers of the Public Works Department, and works supervised by the civil officers: the former will generally be works of greater permanent utility, requiring more skilled supervision, and taking a longer time to complete; the latter will usually be less important, less generally useful, and simpler in character. State what are the circumstances under which either class of work is preferable. Referring to the considerations mentioned in paragraph 7 of the Resolution of the 16th May 1878, quoted in the margin, state also if you consider that there is any class of labourers to whom the one kind of work is more suitable than the other; and what are your reasons for this division.

"Officers trained in the Public Works Department should possess the knowledge and experience necessary for keeping order among crowds of relief labourers, for exacting from them adequate tasks, and for turning their work to the best advantage; but works conducted under their agency are not free from the danger of providing insufficiently for those who are feeble, or unable to give a fair out-turn of labour. District officers, without professional training, do not ordinarily possess the above qualifications in the same degree, and are commonly occupied with other duties. On the other hand, it is peculiarly the province of the district officers to make arrangements for receiving applicants, and admitting them to relief, for classifying them according to their strength and capacity for labour, for organising them into gangs, and thus encouraging members of the same village to keep together."

Punjab.—Small works at beginning; afterwards large ones.

North-Western Provinces.—Concur with Bombay.

Bengal.—Various opinions are offered; one officer objects to works altogether, and would rely on remissions and loans. Others would have the able-bodied on piece-work under the P. W. D., and women, children, and the feeble on works near their villages under civil officers. Small works are recommended at the end of a famine rather than at the beginning.

Central Provinces.—Extracts from the replies compiled by Mr. G. J. Nicholls, C.S., and Surgeon-Major J. F. Barter, Sanitary Commissioner, under the orders of the Chief Commissioner, are printed below.

Madras.—Three European gentlemen have replied to Question 1, and 36 European and 1 Native gentlemen to Questions 2 and 3.

All officers agree that large works should be under the Public Works Department, and almost all consider that Public Works Department supervision is best in every case. Some (being civilians) hold that in no case should works be under civil officers; others urge that professional supervision being scarce, it is wasted on weakly and unskilled labourers; others again think that in such case the works should be directed by the Public Works Department, but the labourers selected and paid by civil officers.

Mysore.—Fourteen gentlemen (Europeans) have replied to this chapter in Mysore. The summary made of the Madras evidence is applicable to these statements.

Bombay.—13 officers have answered. The opinion is unanimous that all works are best placed under P. W. D. management, and that there should be able-bodied and weak gangs on the works. Small works under civil officers are only expedient for the feeble near poor-houses, and perhaps at the beginning of scarcity.

PUNJAB.

PUNJAB.

Muhammad Hayat Khan.—On the first appearance of distress in the district, earthworks, which do not require any skilled labour, may be opened under the supervision of civil officers. Such works will consist of raising and improving district roads, excavating kacha tanks. Other simple works within the boundaries of municipalities may be also opened to afford work to the people. But when the distress becomes serious, and the number of applicants for aid be very large, works of the following description, which require engineering skill, may be devised and taken in hand under the supervision of an officer of the Public Works Department;—(1.) New roads and canals. (2.) Cutting drains for the conveyance of the surface drainage of the country to unirrigated fields. (3.) Rail roads where required; water supply for con-

servancy purposes in municipal towns. (4.) Works in connection with reclamation of marshes caused by floods and accumulation of rain-water and other drainage works. But in regard to forming gangs, making payment of wages and distributing food, the work will devolve upon civil officers, as already said. Able-bodied men should be employed on works which require hard labour and a little skill, and weak and infirm persons on easy and light works, such as spreading earth on roads, &c. No distinction of caste or creed should be made in giving employment to the distressed. Exception will only be made in favour of artisans, who will be employed on works in which they are proficient. Care should, however, be taken that the food is distributed to the different classes of persons separately, so that no unnecessary interference may be made with their caste prejudice.

Mr. Nicholl.—During the first period or during a temporary distress the employment of small gangs in many localities and in the vicinity of their homes is, as already stated, preferable. The advantages of this plan are :—

(1.) That you save the people the expense and hardship of leaving their homes for a short time.

(2.) You allow some of the members of a family to attend to their ordinary affairs while the other members are earning on the works sufficient to support the whole family.

Every one knows that a meal provided for three persons will, on a pinch, suffice for four, and that three persons who club together can live cheaper proportionately than each could separately.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—No relief-works under the supervision of the Civil officers were undertaken in this district. The Civil staff is not strong enough to undertake such works, and the works, whether large or small, or whether carried out by efficient or inefficient gangs, should be conducted under the agency of officers of the Public Works Department. The distribution of the labourers into these two distinct gangs, and the absence of any hard and fast line as to the task required from the weaker classes of labourers, obviates the danger of works supervised by officers of the Public Works Department providing insufficiently for those who are unable to give a fair out-turn of labour.

Major W. Jeffreys, R.E.—My opinion is that wherever relief-works can be opened out under supervision of public works officers, they should always be taken in preference and under all circumstances Where no works of this kind can absolutely be started, it will then be time for district officers to conduct works under their own agency. The two kinds will never work together well in one district, as the paupers will generally leave the Public Works Department works, where work is measured and a task more strictly enforced, to go to the works conducted on laxer principles.

Mr. T. Stoker.—Until the extent and duration of the famine has declared itself, it would be obviously unadvisable to undertake a very extensive work, a sudden collapse of the famine would necessitate either leaving the work unfinished, in which case the money spent on it would be thrown away, or completing it as an ordinary public work, which would involve an expenditure which might not otherwise have been deemed necessary or proper, and under the principle laid down at the head of this chapter the necessity for starting relief would almost certainly arise before the famine had reached a state of development which would allow its future extent and duration to be properly gauged. But smaller works can be started with little apprehension of their being left unfinished. Their completion as ordinary works will entail less outlay, and as they are generally of more local than universal utility, those who locally benefit by them may be found willing to undertake the completion.

With the staff which will usually be available at the commencement of operations supervision can be more effectually exercised over small and detached than large and concentrated works; system is more easily enforced and full work more easily exacted. Smaller works can be safely entrusted to subordinate men, but a large undertaking requires not only an even greater proportion of subordinates, but also the constant presence of one or more superior officers.

And it is absolutely necessary that regular organization be introduced and enforced from the very first and sternly maintained. To compel order, punctuality, and full work among the disorderly crowd of ignorant and stubborn people who flock to a relief-work and have once become demoralized by want of discipline is, I believe, beyond the power of any staff that can reasonably be allotted. No one who has not experienced it can understand the hopeless and heart-breaking nature of the task. Discipline which can be taught on small works can readily be maintained on larger works if it be afterwards found advisable to draft the labourers on to such. Recruits are not drilled in regiments, but in squads.

At the earlier stages the tests of distance and labour can be more readily applied to small detached gangs, and it is to such bodies alone which that test can be applied, which I think the most crucial of all, viz., payments in cooked food.

It may happen that no scheme of an extensive work suitable to the occasion is ready. Small works can at all times be devised, and at all places, too, which is a strong point in their favour. The localities in which a big work can be undertaken are few, and none of those localities may be suitable. Small works excel in mobility.

Arrangements for conservancy, shelter, and perhaps for supply of food and pice, present less difficulty as the groups are smaller. It may, however, on the other hand, happen that difficulty of food supply may render it necessary to concentrate labourers where it can easiest be provided.

But with all these advantages there comes a point at which the numbers are too vast for employment on small works. I have said above that it is a necessary condition for these that a sufficient number should be progressing at the same time within easy distance of one another. I do not, except at the very early stages, when they are started as tests, advocate a number of small works scattered widely over different parts of the district; they should be capable of supervision by a responsible officer of high grade.

If the famine continue and increase in severity the small works of real utility will become worked out, and it will be necessary to have recourse to works of minor or only private utility to afford employment for all the applicants for labour.

At this point a large work must be preferred to a number of small ones.

But there are certainly circumstances under which it may be preferable as soon as the famine has declared itself sufficiently to admit the undertaking. No doubt a large work is always of more general and public utility; and so far as Government can by undertaking such as a relief-work lessen the demand on funds for ordinary works, it is financially a gainer. There are in many districts inchoate designs of large and useful operations which have often been contemplated, and as often deferred for want of funds. For the construction of such works famine relief affords an opportunity not to be thrown away. This is dis-

tinctly a circumstance under which a large work is preferable

To summarize, I would be influenced in the selection by a consideration—

(1). Of the stage of the famine.

(2). Of the extent and nature of the available supervising staff.

(3). Of the nature of the large works contemplated.

I do not incline to the opinion that there is any class of labourers to whom one kind of work is so much more suitable than another as to make it a reason for selection of that kind. It may be assumed broadly that all the labour will be unskilled, and whether the work be large or small, it must be such as can be executed by unskilled labour. Small works will certainly facilitate a division of the workpeople according to their efficiency. But the same end can, I believe, with a proper staff and organization, be attained by a proper distribution into gangs of the labourers on large works.

With regard to the employment of Public Works Department officers, I would as far as possible employ them on all works, large and small. There is not, so far as I know, in officers of that department, any inherent incapacity to discriminate the efficiency of labourers and task them accordingly. They are quite as well qualified as other officials to carry out the instructions which they receive, and a tendency on their part, if it does exist, to exact a full tale of work is distinctly a recommendation. I speak, however, under two provisos—

(1). That they are regularly employed and trained officers of Public Works Department, and not any chance comers enlisted for the occasion. On the works I had so-called charge of, out of four Public Works Department officials one was a lately discharged indigo planter, a worthy and respectable man, but perfectly useless, possessed of neither skill nor training, and another a drunken ex-private of Madras Fusiliers, whose only qualification was a knowledge of brick-making (he was employed on earthwork), and whose efficiency, if he had any, would have been hopelessly neutralized by his complete ignorance of Hindustani; and yet I was absolutely prohibited from interfering with or giving any orders concerning the work under charge of these men, because, being Public Works Department officers, they were supposed to know more about relief works than any of the unitiated.

(2). That the Public Works Department official be something like the same grade and position as the civil officer he is compared with. Though I see no natural deficiency in the Public Works Department functionaries as such, neither do I admit any such superiority as to place every one of them above every one in any other department. For instance, I could not (with all modesty) consider that my qualifications and capacity compared unfavourably with those of Private Murray, though I would cheerfully defer to the opinion of a professed engineer.

These two papers are not confined to this particular question, but cannot well be placed separately under the different questions treating of the subject. They are therefore inserted here entire.

NOTE BY COLONEL ALEX. FRASER, C.B., R.E., Chief Engineer, North-Western Provinces and Oudh, Public Works Department, dated 30th November 1878.

How best to deal with future famines.—It will take some time to submit a full report on the operations which have, during the last 15 months, been carried on in the provinces of the North-West and Oudh to alleviate the suffering of the people during the distress arising from the almost total loss of the autumn (kharif) crops of 1877, and the high prices which subsequently ruled the market in respect of the better classes of grains. But, as I am shortly leaving the service, I may usefully discuss now as briefly as possible, with the experience of the past, the measures which might with advantage to the Government and the people be adopted in any future development of similar distress.

2. It is not for me to say how far the Government of India may be prepared to repeal that Indian social law whereby the rich have hitherto provided for the poor; but it seems certain that, under the recent measures adopted throughout the country, the people are beginning to feel that the Government will take care of the poor, and that it is not therefore necessary for the rich to tax themselves for that purpose.

It becomes a question, therefore, with the Imperial Government to what extent general taxation must be levied to meet this new necessity.

With that question I do not, however, propose to deal in this note, leaving it to the Famine Commission for consideration, after that body has duly digested the mass of information it has called for.

The question to which I desire to address myself is—How best to alleviate suffering from distress or famine at the least expense to the State?

3. I believe myself that, whatever may be the humane efforts of the Government, considerable mortality is inseparable from the loss of crops, be the loss ever so much localised.

A loss of crop in a purely agricultural country means not only the loss of food which goes to support the body, but also the loss of those comforts of life—dwellings, clothing, cattle, &c., &c.—which go to protect it. Unless, therefore, food, clothing, dwellings, cattle, &c., be provided in full, the mortality will be more or less severe in direct proportion to the severity of the distress. Assuming this to be the case (and the fact of the mortality in these provinces, in Bombay, in Madras, or in Mysore would go to prove it for, whatever the measures which have been adopted, whether extravagant or economical, and whatever the organization framed to meet famine, great mortality has followed its attack), I say that Government can only hope to alleviate suffering and mitigate the effects of famine, but that no effort will prevent excessive mortality when comparison is made with favourable years. The means of mitigating the effects of famine may be classed as follows:—

I.—Extending irrigation, whereby crops may be ensured.

II.—Extending communications to enable food to circulate between parts of the country affected and not affected by failure of rain.

III.—Direct measures of relief to a distressed population.

4. The first two of the preventive measures noted in the last paragraph have already engaged the attention of the Government of India for some time, and no remarks need be made on them at present, further than to say in respect of I. that perhaps too little attention is paid to the extension of irrigation by wells in parts of the country where the spring-level is not far from the surface; but as regards the third point (III.), I would desire to put my views before His Honour, so that they may, if he thinks it desirable, be submitted to the Famine Commission.

5. In my opinion the following are the chief faults of the present system:—

(i.) Measures of relief are not taken soon enough to prevent people falling into low condition.

(ii.) Too much reliance is placed on the operations of the Public Works Department to relieve suffering.

(iii.) The organization of relief by the Public Works Department should follow that by civil officers, and not precede it.

6. I think the essential point to ascertain is when the people *begin to suffer*, not when they *begin to die*; but the great difficulty is—(i.) to find out the degree of distress in any locality calling for interference, and then (ii.) to ascertain the condition of each individual of so large a population. This I think can only be done by previous organization, and by the actual parade of the population of each village by the district officer or one of his assistants in any department.

If from actual inspection the district officer is satisfied that there is distress which it is necessary to alleviate in order to prevent eventual starvation, he should at once start a relief camp central to the villages affected, where cooked food, clothing, and covering, if necessary, may be obtained by the necessitous. The system of bringing all the poor, the infirm, the sick, to central poorhouses organized at the headquarters of districts or tahsils seems faulty, inasmuch as it induces the natural guardians of the ordinary poor to get rid of their responsibilities, which they might be ashamed to do if they remained in their own neighbourhood. It excites a sentimental fear that the people are suffering much more than they are when really the poorhouse represents a gathering only of all the poor and needy, sick and infirm, of a district whom their ordinary guardians find it hard to support; it concentrates disease, and renders epidemics liable, at great centres of population and near military cantonments; it renders sanitary management difficult and expensive; and many of the people, putting off their going to these places (for most, other than professional beggars, have a horror of them) till the last moment, die before they get there. The only reason I can see for establishing these poorhouses, other than for the large towns themselves, is that there are medical establishments at the headquarters of districts which are not to be found out in the districts. But the reply to this is that not one per cent. of the population are accustomed to European medical advice; that food, not medicine, is required; and that, in cases of sickness, where one of our own regular medical people is not available, recourse may reasonably be had to the ordinary village *hakim*, in whom the people themselves would possibly have more confidence. The main point I think in all organization for famine relief is not to adopt measures which have a tendency to break up the home life of the people; and if this be true, our system of great central poorhouses and great centres of work is to be deprecated.

7. The present idea, therefore, "that the pulse of distress should be felt by opening a relief-work," an idea not only accepted by the Government, but held by most civil officers, seems to me erroneous, because—

(I.)—Only certain classes will go to a relief-work such as the Public Works Department can offer them—at all events, at first.

(II.)—A public work cannot be usefully improvised all of a sudden.

(III.)—There is no reason why work should be confined to earthwork, of which many classes of the people have a sickening dread.

(IV.)—Useful earthwork is not always available.

In cases of distress the sole panacea seems to be to prepare an enormous scheme for public works, to collect an army of engineers, and myriads of picks and phowrahs, and to dig holes in the earth—useful sometimes, useless often—frequently committing the State to much greater cost than would have been incurred except for the pressure of distress, at a minimum of advantage to the people and a maximum of cost to the State. Besides the entire burden of relief is thrown on one class of officers, the gathering together of whom from all parts of India not only disturbs the economical management of ordinary works at the places whence they come, but often they come too late to be of assistance even at the part (affected by famine) to which they may be directed.

There seems no reason why one should not work more in accordance with the feelings of the people, and more in harmony with their ordinary occupations. Why should not a shoemaker make shoes? A weaver make cloth? A carpenter do his own work? A bricknaker make bricks? A mason put them in place (in the shape of bridges, which are the real want of the country, without which the earthwork thrown upon road or railway is worse than useless, and with which for ordinary purposes earthwork, at all events for some roads, except in approaches, might almost be dispensed with). A cultivator, why should he not be employed in the improvement of the land, in digging wells, which the well-sinkers and the masons together might make pucka? No; at present the most easy thing possible is to get rid of the importunate people by handing them over to the public works officer, while no attempt seems to be made to deal with the classes who have never had a phowrah in their hands or a basket on their heads in their lives, and who have a natural distaste for being turned into *coolies*.

And when the army of engineers have made their plans, it often happens that the condition of the people has not been rightly diagnosed, and that the distress does not exist, has evaporated, or has not set in with the violence expected, and the Government has gone to immense expense, has perhaps put a stop to most important works in other parts of the country, has taken on extra hands it is most difficult to get rid of, with little effect beyond that of ruining the finances, an effect which must eventually recoil on the people themselves.

8. Moreover, it often happens that a relief-work, in its present ordinary meaning of earthwork, is a kind of work to which the people will only resort at the very last moment. The consequence is, when that last moment arrives, a general rush on works, for which there is no adequate provision of establishment, and a multitude of starving human beings to whom must come death and disease for want of adequate arrangements for their comfort.

9. By means of such an organization as that sketched in the 6th para. of this note, and which I will define more fully in a subsequent paragraph, it would be possible to provide for all classes of workmen: all bringing their own tools—the shoemaker his awl and his last, the weaver his spinning and weaving apparatus, the carpenter his saw and his adze, the mason his trowel and plumb, the *hakim* his drugs and his plaisters; and all might be employed—

(i.) In building their own habitations;

(ii.) In making their own clothing;

(iii.) In looking after the sanitary condition of their camps;

(iv.) In looking after their sick;

while the Government would supply the materials and the food, from ordinary sources through the local traders, for the production of articles in which each class of artizan would be an efficient workman.

The aged, the young, the weak, the infirm, would thus be provided for from the first. Those who are strong and able-bodied and accustomed to public works, whether involving brickmaking, carpentry, masonry, smiths' or coolies' work, and on the condition that they are necessitous, would be provided for by the Public Works officers as one only of the agencies of relief.

9. This more minute agency would not be more difficult, because it might be carried out by the zamindars or native gentry for each village or group of villages, with European or other Government agency for inspection of a certain group of relief camps, and no party of able-bodied people should be sent to a Public Works relief work without a *chalan* from such inspector. Notice would be given of the probable number of people for whom work would be required, so that a probable establishment, engineer and medical, might be arranged for.

10. It seems to me to be the duty of the civil district administration to be responsible in all ways for relief, and to provide food and comforts until a proper organization for work exists; and then to distribute the available labour to the best advantage to the people and the Government, treating the Public Works Department as merely one (an important one certainly) of the agencies for the employment of labour. At present the agency of the Public Works Department is not only employed to test the existence of distress, but to undertake the whole, or almost the whole, responsibility of relief; and the heavy mortality which has nevertheless taken place, and it will

not be found to have occurred *on* the works, shews the system is *not* on the whole effective in the relief of famine-stricken people.

11. From past experience it is quite clear to me that the chief cause of mortality would be removed if the movement of the old, the young, the weak, sick, and infirm, the women and children, could be prevented, and they could be provided for at their own homes, while work is found for the "bread-winners" according to their capacity, strength, and previous training. People who in reduced condition begin to leave their homes (and they will not probably leave till they are in a reduced condition) for an unknown distance, and with an uncertain prospect of livelihood in the end, die by hundreds on the road, are often disappointed when they arrive at their destination, and die in double or treble numbers on their return. Once the people leave their villages, all power for relief seems to be at an end; or if relief is given on public works, it is given at an extravagant rate and with minimum advantage to people in the last stage of their strength.

12. I would say, then, generally that if suffering from famine is to be thoroughly met, the civil officers charged with district responsibilities must rely on themselves and not on the public works at the outset of distress; and that public works can be only utilized with effect in the relief of the able-bodied and the strong, who have no other means of earning a livelihood.

13. Before entering definitely into the way of carrying out the above principles, I would say a few words concerning the food to be given to the people. In the relief camps I would only give cooked food to non-workers or imperfect workers, and the people should provide the cooks. For able-bodied workmen and probably to women being *purdanashin*, I would give a money wage, which should be enough to cover a liberal allowance of food to an able-bodied man, woman, or child, and no more. No infants should be allowed on works; they should all be kept in the relief camps, and fed with cooked food or milk where the mother cannot provide the necessary sustenance. A nursery should be a part of the arrangements of all relief camps.

Now, instead of giving the 12 chittacks of flour + 9 pies to an adult man, 10 chittacks of flour + 6 pies to an adult woman or big child, 6 chittacks flour + 3 pies to a small child, other than an infant in arms, in special gangs of people in a *reduced* condition, according to the orders of the Government of India, I would give those rates to ordinary gangs of *able-bodied* people doing a full ordinary task of work on public works, and give the other rate of:—

10 chittacks flour + 9 pies,
8 „ do. + 6 pies,
4 „ do. + 3 pies,

to the gangs on the lighter employments of weaving, &c., in the relief camps; while the ordinary poorhouse rate of—

8 chittacks flour,
1½ „ dál,
¼ „ salt, } with

vegetables twice a week, would be sufficient for the non-working adults in the shape of cooked food.

For children under 10 years of age the amount might be reduced to—

4 chittacks flour,
1 „ dál;

and for children in arms not being nursed—

2 chittacks flour,
1 „ dál.

I feel certain, and I am supported by all medical authority in the North-West, that people in a *reduced* condition cannot eat *more* than people on full work, though they may require special diet. On the other hand, if I ask a working syce or a hard working chuppra-si what food he requires to keep himself in health and strength, he will say "*ser bhur atta pao bhur dal*," at both meals, while one's bearer or those doing less hard work would say "14 chittacks." When prices were high they would probably reduce their food if their masters did not pay them extra; and so I think, where the demand from an able-bodied man is the *full* task (and I would demand nothing less), and not "within 25 per cent." of it, the wage to cover the food should be sufficient to prevent the workmen falling out of condition; and to prevent this, and to get full work, it is quite worth while erring on the liberal side.

It must be remembered that our rate in the North-West has practically been for an adult male the value of 10 chittacks flour + 6 pies, which is the mean between the Government of India's maximum and minimum rates for ordinary gangs. The original principle of the Government of India was that we were to get a full task for a bare subsistence, and though these new orders upset all previous principles and rendered all discipline impossible, yet I have hitherto considered that we never have been able to get full work from anyone, and that the value of 10 chittacks flour + 2 dal + ¼ salt, which represents about the mean above noted, was sufficient; but if we insist on the full task, the value of 12 chittacks + 9 pies, with a reduced rate for short work of the value of 10 chittacks + 3 pies, will not be excessive. The great difference between maximum and minimum rates would probably be sufficient to induce the people to work the full task, without further punishment. But I would give the magistrate special power to inflict stripes up to a dozen for continued refusal to work on the part of any able-bodied man accustomed to do public works or choosing to do them in preference to working in his own line. The main object of this proposal in respect of food is that I would give the increased amount *not* to people in *reduced condition*, as contemplated by the Government of India, but to the able-bodied doing *full* task, to prevent the possibility of their getting out of condition.

14. With the above remarks I am prepared to answer the question put at the end of my 2nd para.—How best to alleviate suffering from famine at the least expense to the State? I must start by saying that all campaigns require long preparation and permanent arrangement of means for carrying them on. A campaign against famine is the most difficult of all, and requires everything to be in perfect fighting order.

(i.) Therefore, whatever may be the conclusion arrived at in respect of the work to be exacted from the people, the first thing to be done appears to me to be to prepare a famine chart of each district which shall give the following information:—

(*a.*) Each village in the district shown on the chart by a numbered dot.
(*b.*) All roads.
(*c.*) All railways.
(*d.*) All rivers.
(*e.*) All canals.
(*f.*) The tahsíls.
(*h.*) The police stations.
(*i.*) The dispensaries.
(*j.*) The sudder station, in a black circular dot of large size without number.

This chart shall be prepared by the district engineer and presented to the district civil officer, who shall then—

(ii.) Prepare a statement, to be written on the chart, showing—

(*a.*) The population of each village.
(*b.*) The number of such population in each class of occupation.
(*c.*) The name of the zamindar or zamindars owning the land to which the village belongs.

(iii.) This having been completed, the district officer shall—

(*a.*) Form the villages into groups, and fix the position of a relief camp, which shall be shown on the chart on the line of communication nearest a main line of road, or on a

main line of road if there be one, or at a railway station if within the group, or on a canal if a navigable one, in a red ink circular dot.

(*b.*) The villages forming the groups should not be in excess in distance apart of the power of a sub-inspector to visit each day. This sub-inspector might well be the zamindar or other native gentleman, or junior native official, who would be appointed when required.

(iv.) From the above a chart should be formed of relief camps and communications only :—

(*a.*) Each relief camp being shown on the chart by a red circle, with the centre on the line of communication, and within the circle being written villages Nos. 0-to-0—the group of which it forms the centre.

(*b.*) These two charts shall then be submitted to the Commissioner, who shall—

(v.) Group on the chart :—

(*a.*) A certain number of relief camps, which shall be subject to an official inspector, native or European, and each of which it shall be possible to visit once a week. To this inspector, when appointed, a native doctor should be attached.

(*b.*) Then to enter on the chart the numbers of groups which shall be within each tahsíli, to which an assistant surgeon should be attached when necessary.

(*c.*) And then to divide, for famine purposes, the total number of tahsílis between the collector and magistrate's European assistants, whether of the Revenue, the police, or the Public Works Department; and the district civil surgeon shall be district inspector in matters medical and sanitary, while the Sanitary Commissioner shall be inspector-general of relief camps. The executive engineer of the division shall prepare these charts for the Commissioner.

(vi.) The charts shall then be submitted by the Commissioner to the Board of Revenue, who will submit to Government with remarks if necessary. The arrangements having been approved by Government in the Revenue Department, the charts shall be forwarded to the Public Works Department to be lithographed, and copies shall be kept in each department of the Government, with the Commissioner, with the district officer, with a spare copy for each of his assistants, a sufficient number of copies in each tahsíli for the inspector of each group of relief camps, and with a separate copy of each relief camp, with its corresponding group of villages, for each sub-inspector (see *b* of iii. margin). These small charts shall contain the particulars of each village referred to in (*a*), (*b*), (*c.*) of ii.

(vii.) We have now the whole country in each district mapped out for famine purposes. We know exactly the population we have to deal with, and the classes of people to be managed, the number of sub-inspectors and inspectors we require, and they all work up to the district officer and through the Commissioner to Government.

(viii.) Then, in case of any disturbance of the natural course of the seasons, the responsibility of dealing with distress shall lie with the collector. He will send orders to the assistant in charge of any groups of relief camps as laid down in his chart carefully to watch the course of the distress, and if aggravated the assistant shall call upon the collector to send him a medical officer, and actually parade the villagers within any particular group. He shall then report to the collector, who shall determine whether it be necessary to start a relief camp. If he thinks so, he shall do it at once, appoint a sub-inspector, authorise the necessary expenditure for the formation of the camp, to which all necessitous people shall be admitted.*

(ix.) Plans of dwellings suitable for the relief camp should be prepared by each district engineer, with due regard to the material at command. They should be of the simplest and cheapest character, and the people should be, with due regard to sex (families being allowed to remain together), pretty close together in the cold weather. In the hot weather they can well lie in *topes*, with only covered places for the sick. Families might be allowed to return to their homes at night until work was provided for them. The district engineer will provide such work as may be available in repairs, &c., and the sub-inspector or inspector will gather the workpeople of other kinds together, with their own tools, and providing the material, set them to work in their own line, either in camp or in their own homes. The kind of clothing which will be suitable for the people should be settled, and that should be first prepared, cloth being afterwards stocked for future sale when times get better, so with shoes, &c. The local smiths might prepare first the cooking pots, &c., and afterwards tools for public works. The local carpenters might erect first the houses for the people and afterwards handles, &c., for the tools, and both might make ploughs and other agricultural implements. The cultivators might be set to work improving the neighbouring lands. For instance, what better work could they find in the Jhánsi Division than trenching the land and eradicating the kans grass. Well-sinkers and masons might make wells for the neighbouring estates, and thus ensure the land against future drought.

(x.) The local Accountant-General and local Examiner of Public Works Accounts should submit to Government for approval forms of simple accounts which it would be necessary to prepare, showing by whom they are to be prepared, and how submitted, how posted, audited, and disposed of, and a committee might be formed between the Revenue and Public Works Secretariats, defining the forms of report which it would be necessary for Commissioners to submit to the Government.

(xi.) While the relief camps were in course of formation, the Public Works Department would be preparing plans and making arrangements for carrying out such absolutely useful works as may at any time have been contemplated; but the people should not be allowed to wait upon the requirements of the Public Works Department, but should be provided for at once in the manner indicated.

(xii.) Municipal towns should not be included in the charts. A separate list of them should be kept, and they should understand that they would have to provide poorhouses for their own poor.

15. With the above plan previously arranged for the whole of the country, we should be prepared for all contingencies; and if the object is to prevent the people getting into bad condition, which is the only way of preventing mortality to any extent, I am strongly of opinion that previous arrangements, such as I have suggested, will alone enable the Government to take the people in hand in time. The local Government is only responsible for giving effect to principles laid down by the Government of India, and has hitherto loyally done so; and though a mortality of three hundred thousand out of a population of forty-two millions cannot be considered much, when we consider the severity of the distress (and the length of time the people have endured it) and of the season, or when we compare it with the loss in money and lives in other provinces, yet if the Government of India determine that even such a mortality should to a certain greater extent be preventible, then I think

* This need not necessarily be a camp *into* which all the necessitous should be drawn, but may be the centre *from* which relief may be given in the houses of the people; a depôt for food, for medicine, for clothing, &c., residence of sub-inspector, and may be a central village if convenient for the purpose.

Ch. III. Qn. 2.

North-Western Provinces.

it can only be so mitigated by a scheme of previous preparation such as indicated above, and which seems only elaborate in so far as it is complete, and will remain complete for any length of time.

16. I have said that I would not in this note discuss the question of taxation to meet famine expenditure; but as I am, I expect, about to leave the service, I may as well say what is in my mind on the subject. It is this—

That when a famine affects any particular locality, it increases the value of grain in all other localities; and supposing that one-fourth of the whole of India be affected, the value of the produce of the other three-fourths is very much raised.

It does not appear to me, though I don't pretend to know anything of political economy, either unreasonable or inexpedient to make the producers of the three-fourths pay out of their abundance the cost of a famine in the one-fourth.

I calculated some time ago (how far I was right I don't know, but it could be easily verified) that one anna an acre on three-fourths of all the cultivated lands in India and Burmah would produce about two millions sterling a year, which, as it might be collected with the land revenue, would not be difficult of collection and would be a fair enough impost. I think the producer should pay this impost (modified in amount according to nature of crops), as he is the direct gainer by the famine. Where no crops are produced, or where only sufficient comes off the land for home consumption, the tax might not be levied. The proceeds of a tax of such a character might be credited to a general famine sinking fund, against which should be debited all famine expenditure.

Municipalities might also be legally empowered to levy a tax (say an additional house tax where such tax is already raised), which might in the same way be credited to a municipal famine sinking fund.

These taxes might be raised under a poor law, which, as it seems to me, it will be absolutely necessary to enact.

If there were a series of prosperous years the fund might stand at ten (10) millions sterling without further taxation; but directly famine expenditure again occurred, the tax should again be put on the parts unaffected by drought. The capital sum for municipalities might be fixed with reference to the number of inhabitants, at say about ten lakhs for every fifty thousand of people, which would represent the support for a year of man, woman, and child, at an average rate of one anna a day each.

17. The above represents, of course, only my individual opinion.

Alex. Fraser.

Note by His Honour the Lieutenant-Governor, North-Western Provinces, and Chief Commissioner for Oudh, dated Lucknow, the 12th December 1878.

I quite concur with Colonel Fraser in his valuable suggestions with regard to forming the villages in a distressed tract into groups. But I do not think his proposal to keep the women, the aged, the young, and the sick at their homes, and to employ the bread-winners only in their several avocations in relief camps would quite answer. It does not go far enough. I think, having got our groups and the requisite agency for inspecting them, we should see if we could not relieve *all* the destitute people at their homes through the instrumentality of the village authorities and of the zamindars. These last, as a rule, do little in return for the privileges which they enjoy. They were formerly responsible for the detection of crime and for the apprehension of offenders within the limits of their respective properties, and they should be so still, if only we could prevent the executive from being hampered and thwarted at every turn by the judicial authorities. But it is at least not unreasonable, in the presence of such exceptional difficulties as those created by a famine, to require them to co-operate with us actively, both in person and in purse, for the mitigation of the prevailing distress.

Professional labourers, among whom might be included ploughmen and all those who ordinarily derive their support from field labour, might be employed under village supervision on works near the village; but I would give the starving cultivator enough to keep him alive, recovering the amount from him afterwards, just like an advance for any other purpose; and, similarly, I would call on the zamindars, the village proprietors, and the well-to-do cultivators at least to assist the State by contributing their quota towards the support of their ploughmen and other persons who ordinarily work for them for subsistence. If they professed their inability to do so, I would give them a similar advance to be recovered in the same way. The chief difficulty would be to deal with the starving non-agricultural community, whom the agriculturists could not be expected to support; but I think, with a thoroughly well organized inspecting agency, these people might be relieved at their homes. I do not think it would be worth while to provide them with material and exact work from them each in his own trade, for we could never dispose of the produce, some of which would of course be perishable, while to come into the market to dispose of the rest would be to take the bread out of the mouths of the very people whom we had been assisting until the arrival of better times, so that to provide material to be manufactured into stuffs which we could not dispose of would be merely to incur the loss of that material. Nor do I see any way to providing a test which persons must comply with in order to prove that they are destitute and proper objects for relief. I would, therefore, feed for nothing those among them whom the inspecting officer who would weekly visit the village should declare to be really deserving objects of public support, but I would give them the smallest dole sufficient to keep them alive.

It is not to be denied that an enormous sum of money would be required to carry out these measures in the presence of a real famine, and it may be that the resources of the State would be inadequate to meet it, in which case I do not see that Government can do other than admit that Providence must to a certain extent be the victor in the struggle, and that it can go no further than it has the means of doing without landing the country in a state of bankruptcy, which would eventually be more ruinous to the community generally than the loss of some scores of thousands, or even of some hundreds of thousands, of a redundant population by the operation of famine. The only alternative that I can see is to stick to the present arrangements, which, as I shall show hereafter, are inadequate for the purpose, if that purpose be to save the greatest possible number of lives.

To carry out the measures suggested above, under ordinary circumstances it would be necessary to establish depôt centres, such as the relief camps suggested by Colonel Fraser, at which grain could be stored. I am by no means sure, however, that it would not be sound policy at once, before we are threatened with a famine, to establish a granary in each village. The number of people who would probably come on relief might be estimated, the period for which in an ordinary famine they would need support might be calculated, and lastly, the amount of grain which would be required might be determined. And the cultivators might be required to put that amount into the granary. At the end of a year, or at the end of six months, if it were decided that the grain should be stored at the harvesting of each crop, the supply might be taken out, used for seed or otherwise disposed of, and a fresh amount put in. This arrangement for the whole country would also, doubtless, cost an enormous sum of money. In fact, it would be providing the necessary amount of capital in the shape of grain instead of in the shape of money. But I am of opinion that the scheme, which was suggested by one of my ablest officers, Captain Pitcher, is worth thinking out by the Famine Commission.

At any rate, I am of opinion that, if the object of relief is to save the greatest possible number of lives, the present system of works and poorhouses is a clumsy and expensive failure.

It is expensive because it does not give a full equivalent for the sums expended. Unskilled labour is only of service in the case of large earthworks, and there are few such in these provinces, so that, when the vast Department Public Works establishments described by Colonel Fraser have been collected and paid for, it may be doubted whether the works are really remunerative, especially if, as is often the case, they have to be abandoned when incomplete at the end of the famine operations.

The system is clumsy, because it fails of its object. I can prove beyond the shadow of a doubt that thousands of people have preferred to die at their homes to accepting this form of relief, although they were perfectly well aware that it was available: and, moreover, it is questionable whether it is humane to compel artizans who are by habit and physique unfitted to undergo hard manual labour to dig for their support; and still more is it questionable whether it is right to compel the high-caste Thakur and Rajput, whose only fault is hunger, to perform a task which degrades him both in his own eyes and in those of his countrymen.

For these reasons I would rather see another system adopted, and I think the right system will be found in the direction indicated above and in Colonel Fraser's memo. This is but a sketch, as Mr. Caird wishes Colonel Fraser's memo. to be with him by the 14th instant, and I have, therefore, no time to go more fully into the subject, which, moreover, lies more properly within the province of the Famine Commission, to whom I submit these observations for what they are worth.

George Couper.

BENGAL.

Mr. Magrath.—As before stated, I consider that large works are the only proper and suitable method of relief for the multitude, and that they should be properly laid out and conducted by Public Works officers. The Civil officers would be occupied in looking up the distressed population, sending them to the proper works, and looking after the helpless, the feeble, and those who cannot use the spade. At the same time I wholly dissent from any attempt to keep the people of villages together, as I consider it neither profitable nor practicable, and the attempt in the famine of 1874 to do this, as well as to classify the people according to their strength, proved a complete failure, and, coupled with the introduction of piece-work, suddenly led nearly to the immediate reduction of a large number of people to starvation. I think that most officers will allow that works conducted under the Civil officers were, with few exceptions, anything but a success.

Mr. O'Donnell.—It is certain that the greater part of relief given by Government (as at present advised) consists of relief-works, and it is certain that these relief-works cost millions of money. The question, then, that presents itself to me is whether it is not possible to devise some scheme of relief which will not involve the loss of 75 per cent. of the capital invested. I have not asked myself this question without making an effort at its solution. I believe that the forms of relief which subsequently involve the least loss to the State depend on the temporary remission of land revenue, the free granting of loans in cash, and the stimulation of ordinary trade and grain supply.

First.—The rigorous exaction of Government land revenue in a year of famine is felt, it will be allowed, most severely by the poor, and principally by the agricultural poor. If Government makes the Zemindar pay up his revenue, the Zemindar in turn must secure himself from ruin by exacting rent from his tenants; the result is that the tenants as a body, unable to recoup themselves from incoming crops, are forced to sell any stocks of grain they may have, and often to indent on their savings if they have any. When the tenant-farmers are in this position, the fate of the day labourers, who depend on them, is a very miserable one. To take the case of Behar, where two famines have been caused by the failure of the winter rice, the shortness of food was most felt from the 1st of December to the beginning of the rains. I know that it is a fact that the distress on both occasions was hastened by the exaction of Government revenue in the beginning of January in both 1866 and 1874. The great mass of the farmers of Behar had certain stocks of grain, which, however, they were forced to part with early in December in order to meet the demands of the rent collector. Unfortunately the purchaser was usually the village mahajun, who paid the least possible for the grain, and then kept it out of the market for months in order to raise its price. I do not exaggerate when I say that in very many tracts in Behar in 1874 the scarcity would have remained perfectly manageable until the reaping of the spring crops, but for the manner in which the land revenue demand was enforced in January in that year. At the same time, there is not the smallest doubt, as I hope to prove further on, that a suspension of revenue need only be temporary, and Government could within a couple of years recover every pice they had suspended. It will be said that suspension of Government revenue might not result in a similar suspension of their tenants' rents by the Zemindars. I answer that it would purely be the result of most blameable weakness in Government if such rent suspension was not made by the Zemindars. For my own part, I should have no mercy on men who refused to extend to their tenants the consideration which they themselves received. I am convinced that both Native and European opinion would support Government in most heavily fining any Zemindar who oppressed his tenantry in such a manner at a time of famine. The land revenue of Sarun is 12 lakhs of rupees. Famine relief cost 50 lakhs, 25 of which never will be recovered. I believe if the instalments of land revenue due in October 1873 and January 1874, 6 lakhs in all, had been temporarily suspended, 5 lakhs more judiciously spent would have seen the district safely through the worst period of distress which precedes the rains. I have heard both Natives and Europeans remark that the policy of Government seems to be first to exhaust the resources of the ryot, and then save him from the results of its own conduct.

Secondly.—I believe that the very best form of relief consists of a very liberal granting of loans in cash. I am aware that the giving of a loan presupposes some ability in the borrower to give security for its return, and I believe that there is hardly any family, even of day labourers in Behar, who could not give security for Rs. 20, which would be sufficient to keep such a family for eight months of the year. I estimate that there are 100,000 such families (of five individuals each) in the district of Sarun, and about 100,000 more of the poorer agriculturists. It seems a rash proposition to suggest the lending of 40 lakhs of rupees in one district, even to support a million of people, till it is remembered that 20 lakhs were lent out in 1874, of which 19 lakhs have been already recovered. It is quite possible that as high a per-centage of 40 lakhs might not be recovered, but it could never involve such a wholesale loss as the system of relief works.

CH. III. QN. 2.

BENGAL.

The relief given in 1874 in Sarun may be grouped and valued in rupees in the following manner:—

Advanced on loan—

	Rs.
In grain - - -	13,50,000
In cash - - - -	6,50,000
Total - -	20,00,000
Recovered in three years -	19,00,000

or 96 per cent.

Expended on relief works—

Paid in grain - -	9,00,000
cash - - -	15,00,000
Total - -	24,00,000
Actual value of work -	6,00,000

or 25 per cent.

Had the famine been properly managed from the beginning, no such vast outlay as this would have been necessary. Still the figures show, what I am now most concerned in proving, that loans are highly recoverable, whilst relief works are most extravagantly expensive. There is also the fact that the labourers on relief works are withdrawn from ordinary field labour —a mischief that can hardly be exaggerated. In 1874, had the hundreds of thousands of labourers on relief works been able to devote themselves to the produce of late *rabi* and *china* crops, many lakhs of rupees would have been saved. Again, large crowds of labourers generate the most fatal diseases; and lastly, they are infinitely more likely to become demoralized by famine than if they were assisted to live in their own homes.

The loans in 1874 were made principally to farmers, and it is now abundantly certain that they were solvent and able to repay their debts. There may, however, be some doubt that day labourers would be equally able to clear off their debts. They would at least be able to pay very much more than 25 per cent. of their borrowings. For whatever might remain, I would make the landholding villagers of the mouzah in which they reside responsible. One might safely trust them to recoup themselves by the labours of the labourers. It may be again objected that the labourers would abandon their villages in order to escape their debts. I can only reply that I do not believe they would. The farmers know their value a great deal too well to harass them into flight. Moreover, a debt of 15 or 20 rupees is not so great as not to be payable, at least in labour, in a few years by even a poor labourer of Behar. It must be remembered that his debt would not bear interest, and it is a fact that in all cases of agricultural indebtedness, such as exists in the Deccan, it is not the debt itself, but the hopelessness of ever getting rid of it; it is not the principal, but the ever-growing interest, that is the source of mischief.

Even after a most *grievous* famine in the district of Sarun, such as that in 1874 was rightly or wrongly supposed to be, I believe that if there were early suspension of land revenue, followed by loans in cash on local security to the amount of ten, perhaps twenty, lakhs of rupees, famine would be entirely averted, and by the end of three or four years both land revenue and loans would be recovered, with a loss perhaps of five or ten per cent. Government would also suffer the loss of interest on the loans, and this it seems to me, together with the above five or ten per cent. loss, might fairly be recovered from the people at large by special taxation. The trading class, it is true, gain very much during a time of famine; still it must be allowed that such a tax as the present license tax is wanting in certain elements of justice, inasmuch as it has been laid on *before* full and proper efforts have been made to recover the expenditure on famine relief from the persons and localities that profited by it.

Thirdly.—The importance of stimulating grain trade during a time of famine is so well known that I need not dilate on it. The Government is in possession of very full reports on the subject. I need only say that it is evident that my scheme of money advances would be of very little use in tracts which trade could not supply with food. I, however, do not contemplate such cases, which I believe are very rare, and which will become still fewer with that extension of railways and other means of communication which is so devoutly to be hoped for. Any expenditure that might result to Government from stimulating grain trade might also be justly recovered by means of special taxation.

Mr. Finucane.—I consider that ordinary professional labourers should always be employed under officers of the Public Works Department, and that cultivators and such weakly persons as are admitted to light labour gangs should be at first employed under Civil officers. My reason for this division is, that I think cultivators and other non-professional labourers are apt to suspect that the object of officers of the Public Works Department, in giving employment on relief roads, is not alleviation of distress, but, on the contrary, that they take advantage of the people in their need for the selfish purpose of pushing on their district works. In the case of Civil officers they have no such suspicion. They know that the making of roads and tanks is not a matter in which Civil officers can have any special interest other than the alleviation of distress.

For this reason, cultivators resort with much more confidence to works under the supervision of Civil officers, and this, too, without waiting to be driven to extremities. I noticed very great reluctance on the part of the ryots of Dinagepore to come on relief works at the early stage, though at the same time they declared they were in great distress. On asking an explanation of this fact from the Zemindars and ryots themselves, I was invariably told it was *Sarkari kam* ("Government work") which, according to their notions, meant all work and no pay. At a later stage, when regularity in payments had inspired the people with confidence, they showed no such hesitation. I do not, however, think that there will be any difficulty under this head in any future famine that may occur in Bengal or Behar. Gratitude to Government and confidence in its relief measures is at least one good legacy left by the scarcity of 1874.

In the second stage of famine, by which time the objects of relief measures, the system of payment and of measurements, &c., become known, and confidence is inspired, I would have no hesitation in drafting all able-bodied men off to the more important works under the Public Works officers. When cholera or other epidemic disease breaks out, I should think it preferable to employ relief labourers near their homes on village tanks, repairs of village roads, and similar works. I also think such works are always preferable until such time as officers of the Public Works Department have had time to properly survey, allign, and arrange for the construction of the more important works. What I mean is, that I think it preferable to employ people at the early stage on village works which are sure to be of some benefit rather than on more pretentious works, which being begun and carried on in a hurry, very often turn out of no benefit at all.

Mr. Kirkwood.—I reached Bhagulpore from furlough early in March 1874. Nothing, or next to nothing, in the way of actual relief had then been started. In the middle of that month I crossed to that part of the Bhagulpore district which lies north of the Ganges, and where alone there was much distress,—distress which deepened much towards the more northern and western parts. The commencement was two months later than it should have been. True the Public Works Department officers had already considerable numbers on their works. These were in receipt of a daily wage, the only qualification for which was that a certain unknown quantity of work should be done. The Public Works Department officials had already begun to complain that many of those coming on to their works were fit recipients of charity, and were too

feeble to render anything like a fair return of work for the daily wage. They were beginning to beg that they might be relieved of the charge of such persons, whose circumstances were not fitted to the conditions of their work and whose presence did much to disorganize those who really could and should do full work. But they were told (and I think rightly) that they must go on affording relief to those feeble persons until our Civil agency was ready to take them off their hands.

We started, as I have said, two months later than we should have done, and it was very hard work to recover that lost ground. Establishments had to be organized out of very inadequate materials. Then the thing that had a first claim on our attention was the inspection of villages and the drawing up lists of those standing in need of relief, relieving gratuitously, then and there, those who had fallen into a condition which rendered immediate succour necessary. We were obliged thus to cut off fear of death by starvation before we could begin to reorganize existing relief arrangements. Owing to this cause, it was not until mid April that we had got light-labour works started, and not until the beginning of May that this relief was well afloat. It should have been so at the beginning of March. That it was not so meant that for two months many had been on the Public Works Department works doing next to no work and getting into lazy and demoralizing habits; while many, from whom those works were too distant, had been languishing in their homes and would now require some considerable gratuitous relief before they could become sufficiently strong to be sent on to the newly-started light-labour works.

The distressed parts of North Bhagulpore were in area about 1,800 square miles with a population of 800,000. Severe distress extended to about half of this area and population. Towards the end of April the numbers on the works of the regular departments (namely, those of the Public Works Department and of the Engineers of the Durbhunga Raj) amounted to about 50,000. In June these had dwindled to 10,000; and it was only the Divisional Commissioner's insistence that made the Public Works Department officers continue to employ even these reduced numbers for a further period. This reduction of numbers was in part the result of our organization of relief measures, and in part of the calls made on the population in May and June for cultivation purposes. Early in June, too, the continuation of many of the Public Works Department works was rendered impossible, owing to the land being under water. Nevertheless, there can be no doubt that in June the Public Works Department purposely contracted operations and closed works which were still possible, and which should have been kept open under the normal conditions of their department. That they did so was, I conceive, a serious mistake. It compelled large numbers to subsist on advances of grain who would gladly have worked. It was not any fear of diverting labour from the fields that led them to adopt this step. That fear was known and recognized to be groundless. They did so in order to comply with the purely departmental concerns of neglected estimates and office work, which the stress of the previous months in conducting relief had thrown into great arrear. I think that was hardly a sufficient cause. If this latter evil could not be obviated by the employment of extra hands, it seems to me a mistaken idea of proportion to regard its continuance as a greater evil than a stoppage of works. One of the consequences of this stoppage was that we had, as in some parts the only agency tendering work of any sort, to employ some (though few) people on our works and under our conditions for whom neither those works nor those conditions were designed; for other than gratuitous relief, they had no other means of subsistence left. In April there were on light-labour works a daily average (for the month) of less than 1,000; in May that had risen to 7,000; by June to 13,000; by July to 15,000; and by August to 23,000. The rise took place (*a*) as our operations extended; (*b*) as distress became greater; (*c*) as the regular departments contracted operations. From August the harvesting of murwa (a pulse in general use among the common people), the cheapening of food, and the gradual collapse of the crisis caused a rapid diminution of the numbers on our works. For September the daily average was 11,000, and for October 4,000; operations then ceased. Even in the most distressed pergunnahs we never had on these works more than about 6 per cent. of the population. But then it must be remembered that, though during May the condition of many men was such as to entitle them to a place on our works, yet in June the men who had recovered were carefully weeded out and sent for employment to the regular departmental works, or they of their own accord left to work in the fields. From June there were never 5 per cent. of our labourers grown men; a per-centage reduced from mid July to 3 per cent. Our works were meant only for women and children. Boys of over 15, and nearly all those of over 12 years of age, were rejected, unless their physical appearance pleaded for them. To this rule a few exceptions were made in favour of those who could not get work in a locality where the Public Works Department had ceased to afford employment. Throughout this time, too, it must be remembered that a few thousands were daily employed in a scattered fashion by local Zemindars, at their own cost, on works on their own properties and under their own management. It must be also remembered that, owing to the wise measure of sales of grain from Government golahs at high rates, grain was, from the end of April onwards, kept at a price less than three times that ordinarily prevailing, a measure of which the complete wisdom became, I regret to say, in my opinion, marred when, in the later months of July, August, and September, Government not only followed but led the downward course of the markets, and sold more cheaply than its limit originally fixed in March, of 10 seers per rupee, and even than its limit as revised in May, of 12 seers per rupee. In my opinion the 10-seer limit should have been adhered to throughout the operations, and the doors of the Government store-houses should have been closed so long as prices remained more favourable than that rate. It must also be remembered that, throughout this time, we had some five thousand persons maintained by the spinning and weaving relief operations, and that very large grain advances were, during June, July, and August, made to villagers on joint village security and on the security of Zemindars (all, I believe, subsequently recovered without trouble). The grain advances made during those three months by Government, apart from those made by the Court of Wards, were sufficient for the support of about 90,000 persons throughout that period, and in this way many who had hitherto been on the Public Works Department earthworks were supported while cultivating their lands.

It may be well here to note the total number of persons relieved during the three worst months of the year; namely, May, June, and July. Taking the daily average for the whole of those three months, there were (in a population of 800,000)—

(1.) Relieved by regular departmental earthworks - - -	31,000
(2.) By light-labour (earthwork). (Each woman on the work earned in those months enough to support herself and a young child not fit for work, not only on the days when she worked, but when no work was possible owing to heavy rainfall) - - -	32,000
(3.) By spinning and weaving relief -	5,000
(4.) By gratuitous relief - -	32,000
Total - -	100,000

The incidence of this relief (on an average 12 per cent. of the whole population) varied much according to the intensity of the distress. In some parts it was not 5 per cent.

Besides this, an average of about 117,000 persons were for those months maintained on advances of grain made by Government and by the Court of Wards; and 175,000 additional persons were for a similar length of time subsisting on grain purchased from the Government stores. Other relief was afforded in the way of wages to cartmen, house carpenters, thatchers, and other employés. Ninety per cent. of the gratuitous relief was to persons in their own homes. In some parts fully 80 per cent. of the population were subsisting on Government relief in some form or other. These figures will give some idea of the extent of the operations of which I am speaking.

To return to light labour. In Bhagulpore we very exceptionally hutted people; we did not compel them to go far from their homes. The expenditure on hutting and on small store-houses on the works was under Rs. 1,000, and there was no necessity for more. The Public Works Department works, while in force, likewise did not, for the most part, draw people far from their homes, and were scattered, being mostly of the nature of roads running through the distressed parts; hutting even on these works was quite exceptional. This course was rendered possible by the numerous works opened in the distressed area. The light-labour works numbered exactly 100, of which 60 were tanks, 2 embankments, and 38 roads. The tanks were mostly old ones; the labour on them consisted in deepening and enlarging them, and in dressing and turfing the banks; some of the roads were new, and some were repairs of already existing tracks. The lines of road for our operations were carefully selected; at the close of the famine we left some few of them still undressed and unturfed for completion by the regular department. The works, considering that we had to be content with locally improvised overseers, whose only recommendation was that they could read and write, were not badly executed, nor were the financial results unsatisfactory. Each person actually working on our works earned on an average, per mensem, grain representing in value Rs. 2-4; 74,000 persons actually at work for a month received wages in cash and in kind, kind being converted into cash at the then current rate, equivalent to Rs. 1,66,426. In normal times at normal rates the work done by them would have cost just under Rs. 1,00,000; 42⅓ per cent. of the expenditure was due to the high rates paid and the unskilled nature of the agency employed. The cost of the establishments for these works, including a per-centage of the pay of the supervising officers engaged on other works as well, was 5½ per cent. on the remuneration given to the labourers. There was also an expenditure of more than Rs. 2,000 (or over 1 per cent.) on account of hutting and contingencies. In April and May rates were (in accordance with the April orders of Sir George Campbell) made very liberal on our light-labour works, so as to attract people and let them work for their living instead of receiving aid gratuitously. I think this course was, owing to the lateness with which we began, to some extent wise; though the rates might perhaps have been, without harm, kept a point lower. Task-work (by piece) was from the first everywhere enforced. The rate at first was 6 seers of rice (in May equivalent to 8 annas) per 100 cubic feet of excavation. This was subsequently reduced to 4 seers, and then to 2½ seers; while at the end of August, when the crisis was passing, a maximum earning rate was imposed, limiting the daily earnings of a man to 1 seer, of a woman to ½ seer, of a child to ¼ seer. I think this latter was not a correct course; rather, if necessary, the rate should have been further reduced. I also think that the starting rate might well have been 5 seers instead of 6 seers, without harm and with economy. The average out-turn per person per diem (men, women, and children) was about 25 cubic feet during the months of June and July, when the 4-seer rate was in force; some allowance was made, when fixing that date, for days on which, owing to rain, work was impossible; but such days were very few indeed in Bhagulpore.

On the Public Works Department works it was found during the cultivating season that a large proportion (about 50 per cent. of the workers) cultivated and worked on alternate days; in other cases some members of a family worked on the roads, while others looked to the cultivation. This was as it should be. I would note that, excluding those relieved by advances, sales, and works under the Public Works Department and Court of Wards, we, in North Bhagulpore, relieved either gratuitously, or by light labour, or by weaving and spinning, 287,210 persons for one month at a net cost of 13½ annas per mensem, after deducting the value of the work done by spinners and weavers, and of the earthwork done by the light labourers, calculated at the ordinary rates of ordinary years. This does not include the cost of establishments, but includes all other contingencies in the shape of buildings, &c. Of our outlay on light-labour works all but 42½ was recovered in estimated value; of our outlay on spinning and weaving relief all but about 39 per cent. was recovered in cash. Most of the disbursements were made in grain, which, for the purposes of the above calculation, has been converted into cash at the rates current from month to month at the Government store-houses. The rate was, for the most part, 12 seers of clean rice per rupee. It averaged over the whole time about 13 seers of clean rice, or about 14 seers if the clean and partially husked rice, of which there was a considerable quantity, are taken together. As the relief was thorough, and as the accounts were made up with precision, this expenditure seems to have been economical. Of course, those not so distressed, whose cases were met by sales, advances, and employment under the Public Works Department, were relieved at a much less cost.

In the Cuttack district during 1867, 41,243 persons were relieved on light-labour works for a month each at a total cost of Rs. 1,12,346. Of this sum, about Rs. 6,000 were expended on establishments, hutting, tools, &c. Deducting this (which is just the 5½ per-centage of Bhagulpore), the average receipt per mensem by each light labourer was about Rs. 2-6, as against Rs. 2-4 in Bhagulpore.

(*N.B.*—In answering these "labour" questions the term "Public Works Department officers" is meant to include the district engineering staff employed in Bengal under the Road Cess Committees.)

I would, at starting, venture to express my concurrence generally in the dictum contained in paragraph 6 of the Madras Government's letter No. 2232 of the 31st August 1877, addressed to the Government of India. This runs as follows: "A large "scheme of useful works under departmental super-"vision should be the backbone of the relief system, "all other forms of relief being subsidiary to the "main scheme, all relief works of any magnitude "being directed and controlled by agency belonging "to the Public Works Department. Large works "under professional agency should not be limited to "works which are directly remunerative, nor even "to works which may probably be finished during "the continuance of the famine." I would only remark that such an important and valuable labour relief as spinning and weaving should have found some mention in the scheme; and that, instead of the backbone, Public Works are, after all, only the ribs of a thorough system of relief; the backbone being the keeping of the price of food-grains in common use by Government, interference if necessary, within a fixed limit, which should be treble of the rates prevailing in an ordinary year. This is a matter which will be dwelt on at length in its appropriate place.

I must also venture with all deference to express a doubt as to the axiomatic nature of the proposition laid down on the subject of works in paragraph 20 of the Viceroy's minute of the 12th August 1877.

It is there laid down as necessary "to prohibit "absolutely, in the beginning of the distress, the "opening of petty works under civil officers, or "non-professional establishment among the villages

BENGAL GOVERNMENT LIBRARY

"close to the homes of the people;" and further, it is essential "to allow petty village works to be "opened only when severe and widespread distress "has declared itself at a comparatively advanced "stage in any district or part of a district." I think such works should be prepared when such a failure of crops as must cause widespread distress is assured; and that they should be opened the moment the demand arises for work on them by persons who should be entitled to have access to them and before widespread distress has reached an advanced stage. The one course means timely prevention of starvation and emaciation; the other may often mean an effort—generally in part a failure and a costly one—to rescue from death those who are already half-starved. I consider that the persons entitled to the privilege of working close to their homes with easy rates (in all cases on piece-work) are all women, except those who are professional earthworkers, all children between seven and 12 years of age, some male orphans between 12 and 15 years of age, and feeble or infirm males above the age of 15. I therefore would also venture to demur to another conclusion expressed in the same paragraph of the Viceroy's minute, and repeated in paragraph 26, that relief must be refused "to strong, able-bodied persons "of both sexes in any form save employment on "the large public works." There are able-bodied weavers I would employ on weaving; there are able-bodied women and children I would employ on light-labour earthworks; there are able-bodied women of some respectability I would employ on spinning. I think in thus writing I am speaking in accord with the teaching of the past. I think the success of the relief arrangements in Cuttack (1867) and in Bhagulpore (1874) was, in some measure, owing to the adoption of the classification I advocate and the opening of works, either large or small, as near as possible to the homes of the people. If success was not attendant on the efforts made in Southern India in 1877, and in August distress was still found to be "increasing with frightful rapidity," I do not attribute more than a comparatively small portion of this result to the Public Works policy to which I venture to take exception. I think failure may have been predicated as more or less certain under almost any system of relief which allowed prices for long months to stand at from 5 to 10 times their ordinary figure, while the officials, in defiance of those prices, spoke of the grain-supply as being sufficient. But I think there are grounds for supposing that the adoption of the policy of arbitrary rejection of persons from works and of designedly concentrating people on certain large central works at a great distance from their homes, thereby leaving the labourer the alternative of death or what was a virtual emigration, had much to do with aggravating the disaster.

Able-bodied male labourers should be employed on roads, canals, embankments, and such other permanently useful and heavy works as the Public Works Department officers may be able to provide. The main objects will, in such cases, be to see that the works are of a nature really required, that the work is well done, that all who apply for work are admitted, that full piece-work is exacted, and that, with an increasing distress, works of this nature are multiplied and opened in as many places and as near to the people's homes as possible. Until prices become double those of an ordinary year, the piece-work should be at the ordinary Departmental Public Works rates. When prices are slightly higher than that, there should be an increase of 25 per cent. in the rate paid, and, if prices approximate to a quadrupled rate, that increase should be extended to 50 per cent.

These works should be commenced when any considerable failure, such as a one-third failure of harvest, is assured. They should be increased in number according to the area and degree of failure and the number of applicants. Let but the indispensable condition of payment by piece-work be enforced, and there would be no fear of those or any other works being resorted to before distress compels. Such works can of course be opened too late, but they cannot be opened too soon, except that, if the distress is not sufficiently great, the establishments will be idle. Let the test of payment by piece-work be absent, and the administration of famine-works will drift helmless at the mercy of a peculating crew of subordinates, and of the lazy impulses of a people, one of whose distinctive peculiarities is an inordinate love of sloth.

In the early days of the Behar famine (1874) piece-work was very generally not introduced. The consequence was that the dimensions of the peculation that went on were only equalled by the unchecked laziness of the crowds who flocked to the works.

As for the other class of labourers, which should, as I have said, include all women not professional earthworkers, and all children from seven to 12 years of age, together with any boys of between 12 and 15 years of age whose domestic circumstances may demand some concession, and any males of above 15 years of age whose feeble condition may plead for them, they should be employed on works of as useful a nature as possible in the vicinity of their homes, such as village roads and village tanks. The rates of remuneration given them should be from 40 to 50 per cent. higher than those given to the other labourers, but piece-work should be strictly enforced. Sometimes they may be usefully employed on a portion of the works on which the able-bodied labourers are employed.

It would be of the first importance that no person should be admitted into these 2nd-class gangs other than those for whom they are intended.

Emaciated new-comers into these gangs should, on first arrival, receive a gratuity sufficient to last them for a few days, while they are regaining strength and nibbling at the work.

If I understand aright the classification of labourers advocated by Sir George Campbell in a resolution, dated 3rd December 1873, when he was preparing for the Behar famine, I cannot fully concur in it. Class I. labourers were to be those who could perform a full day's work at the usual rates; Class II. labourers were to be all who could not do so. For "usual" rates I would read "usual rates somewhat enhanced in accordance with the rise in the price of food." Women, not professional earthworkers, should be excluded from the Class I. labourers.

When the failure assured is a half-crop failure, preparations should be made, during the month or two following on the harvest, for opening works here and there for these 2nd-class labourers. But they should not be actually opened until there is a clear demand for them among the persons for whom they are intended.

This would hardly ever be the case, under such circumstances, for at least two or three months after the harvest. When the failure assured is three-fourths or higher, or prices become trebled for any time, then these works should be prepared even before harvest time and should be opened almost contemporaneously with the 1st-class works. The works should be so situated that the people at work on them should be able to go to their homes of an evening. Careful supervision and task-tests are as necessary on these works as on the works on which Class I. labourers are employed. It is thus alone that recipients will escape debasement. The main objects on these works will be the preservation of the lives of many who either cannot or should not emigrate from their homes even for a short time, and from whom it is well to exact work rather than that they should be relieved in idleness, the check of dishonest idleness, the encouragement of industry, and the prevention of peculation, while excellence or economy of construction should be considerations of a very subordinate nature. To a certain degree of course economy is enforced by a system of payment by piece-work.

Ch III Qn. 2.

Bengal

I would notice paragraph 58 of the memorandum of measures for relief published in the *Gazette of India* on the 26th September 1868. It is there laid down that on works for these 2nd-class labourers "a bare subsistence is given for whatever work the labourer can perform," and this is contrasted directly with the ordinary works on which a full rate of wages is given and a full quantity of work is exacted in return. In my view there should be no contrast between the two. Task-work should be exacted on both sets of works; the remuneration for that task should, on both sets of work, be something slightly more than a bare subsistence for the majority of those working, and would thus be subsistence for the more feeble or inexperienced. The difference should be in the amount of work required for each rupee given, and that difference should generally be that whatever the 1st-class labourers get paid for doing three cubic feet of work the 2nd-class labourers should receive for doing two cubic feet.

Bombay.

BOMBAY.

Mr. Hewlett.—I think that works under civil officers should be avoided as much as possible, as it renders supervision and medical administration so much more difficult. I have seen, during the late famine, men, women, and children of the artisan class, such as weavers and tailors, put to earthwork. They were not fitted for it, and it told heavily against them.

Mr. Hart.—As a temporary or provisional arrangement, works under the civil officers may be found convenient for keeping the agricultural labourers close to their homes; at the same time such small works will often afford a test by which to sift the really needy from the lazy or vagabond population.

General Wilkins.— Relief works for unskilled labourers during the late famine were divided into public works and civil agency works. The theoretical definition of the two divisions of works was:—

1. *Public works* for the able-bodied.
2. *Civil Agency works* for the less capable or semi-able-bodied, which definition could not be maintained in practice by reason of the able-bodied being accompanied by their less able-bodied relatives. Government laid down that 75 per cent. of a normal task was to be exacted from the labourers on public works, and to meet the actual circumstances above mentioned, as it was conceded that relatives and friends should not be forcibly separated, the 75 per cent. task was interpreted to mean 75 per cent. of the individual capacity of the labourer.

The Civil Agency works were inaugurated for the less capable or semi-able-bodied, for whom a labour test of 50 per cent. of a normal task was ordered. Civil Agency works were entirely in the charge of district officers, and these works were started in several localities at head-quarter stations, and in the vicinity of the homes of the people.

In my opinion all works upon which a labour test is exacted should be placed under the direction of the Public Works Department. I concur fully with the considerations mentioned in para. 7 of the Resolution of the 16th May 1878, and hold the opinion that the respective duties of the Public Works officers and district officers are well defined in the paragraph quoted.

Small village works might be necessary near villages for the employment of feeble persons capable of performing some work near their own homes, which works might be placed under the direction of local district officers.

District officers should be connected with works only so far as passing to them applicants fit recipients for relief, organized into gangs based on relationship or village connection, and classified as able-bodied or semi-able-bodied, subject therefore to a three-quarter or half normal labour test.

Mr. Propert.—Taking works altogether, Public Works Department supervision is preferable to Civil, and all large works should be under the Public Works Department. I consider Civil works admissible in two instances: 1st, at the commencement of scarcity or famine, when district officers have no means of judging the number of persons really requiring relief at that stage, the opening of *small local* works upon which the minimum rate of pay is obtainable very quickly shows the authorities the actual state of the country. These works should, however, be continued only until larger projects are prepared and arrangements made for carrying them out. 2nd, Civil works are useful throughout a famine for the employment of the weak, the old, and other classes of the people, who will simply rather perish than transfer themselves and belongings to large works at a considerable distance, where strict supervision is maintained and a full task exacted. The pay, however, on Civil works should (as was the case in Bombay) be always somewhat less than that on large works under the Public Works Department.

All persons tolerably able-bodied, who are accustomed to out-door labour of any sort, may fairly be drafted to large works under Public Works supervision. There are other persons, however, totally unaccustomed to hard manual labour, such as small tradesmen or manufacturers in towns, &c., those who are feeble, partially crippled, &c. With regard to these it is more merciful and perhaps more advantageous to employ them on light work near their homes at a minimum rate of pay than to force them upon large projects, where their daily wages would as a rule be reduced in consequence of their having performed an insufficient task.

Mr. Norman.—I consider that all relief works should be supervised by officers of the Public Works Department. In the earlier stages of distress task work may be rigidly enforced. At the height of a famine the rules regarding the exaction of tasks may be slightly relaxed. On all works there should be famine gangs, composed of weakly persons who should never be paid less than bare subsistence allowance. To every large work a district officer should be attached, whose duty it should be to pass applicants for relief on to the works, and to weed out from the ordinary gangs those persons who, he thinks, should only be employed in famine gangs. The only works which ought to be carried on by Civil agency are small works near relief camps and poor-houses of such a nature as can be undertaken by the inmates, who should, if possible, never be allowed to be idle.

Mr. Spry.—From what I have seen of what are styled "Civil Agency" works, I am not an advocate for them. I consider that *all* works should be under the Public Works Department, where they can be properly supervised, which it is impossible to do properly with the civil officers, who cannot give the undivided attention which Public Works officers can. The labour tests, of course, must be modified so as to suit the capacities of the workers, and the labourers must be classed in gangs according to their capabilities. This being done, I do not see why Public Works officers should not supervise the whole. In every family seeking relief there probably is one or more less or non-able-bodied member. If the Public Works Department take only the able-bodied, and civil officers the others, the result must be that a separation of families takes place. This, very naturally, the people will not submit to, and consequently to every Public Works Department work some less able-bodied people will be hanging on, and to every Civil agency work some able-bodied. It is much better to have only one agency.

Mr. Charles.—I do not think that civil works should ever be established as a measure for the final employment of labourers. They should be used merely as a stepping-stone to Public Works Department works, and there should be one at each mustering centre, so that the officer charged with admitting persons on works should be able to send the weaker labourers for a time to the Civil works, and the stronger at once to the Public Works Department.

Mr. Moore.—In my opinion large relief-works only should be undertaken, and these should include a great deal of earthwork, which would provide labour to all classes of people, the able as well as the feeble. I object to small and scattered works under district officers. They are only to be tolerated when there is no large project ready, or when distress shows itself and, there being a doubt as to its duration, it is considered inexpedient to entertain the establishment necessary for a large work.

Mr. Hamilton.—I think large works are in all cases best; and as such works are usually carried out by the Public Works Department, I should put all labourers under their officers. I do not think that small works are admissible at any period of a famine. It is quite impossible, so far as my experience has gone, to supervise a number of small works satisfactorily, except at a great outlay on establishment, and I think a famine may be fostered by opening a number of small works under Civil officers, who can perhaps only visit each once a week. As a rule, I think skilled labourers are but slightly affected in times of distress compared with the rural population. It is never a very difficult task to find employment for such artisans as masons, for instance, as their services are requisite on all large works, as railways and canals, and they need not be specially classed as famine labourers, but treated as at ordinary times. A conveniently situated large work, as a railway running through an affected district, ought to provide occupation for all classes of the population.

Mr. Percival.—All relief-works should be under the Public Works Department. Each work should admit two classes of workers,—the feeble, on a minimum wage, and the strong, on a wage proportioned to their work. It is not easy to get work out of the weak, but the Public Works Department can do it better than the Civil Department.

Colonel Anderson.—In my opinion, all works proper should be under Department Public Works officers. The only works which should not be under them are those of a trifling nature, in which infirm and aged people might be employed not far from their homes or place of relief.

Mr. Robertson.—I have already stated that, as far as it is practicable, all works should be under the Public Works Department, and that only the aged and those physically unfit for proper work should be employed under Civil supervision.

With reference to the latter part of para. 3 of the Resolution of the 16th May 1878, no person should be admitted to any work unless he has received an order for admission, signed by a District officer. The District officer should examine all applicants for work, send all he finds fit objects for State charitable relief—

(*a.*) If able to give a fair out-turn of labour, to a Public Works Department work; and

(*b.*) The aged and those physically unable to give a fair out-turn of work, to some work under Civil agency.

I consider it is not a question of the class of labourers for either kind of work, but entirely a question of physical fitness.

Mr. Bosanquet.—As I have said in my answers to questions under Chapter II., I think in the commencement of a famine large central works under the Public Works Department are advisable. It will depend a great deal on the sufficiency of wages given to persons so employed what further kind of relief work becomes necessary. After a time, artisans, like weavers, who, in consequence of the pressure of the times, find no sale for their manufactures, and who are unfitted, by the habits of their lives hitherto, for earthwork, may require assistance by raw materials being given to them to work up. As the famine continues, and private charity is less liberally given, and relief-houses, supported wholly or in part by Government, are established, a certain number of persons will be found who are proper inmates for such relief-houses, but who can do some light work. This light work may, in the case of many of the women, be spinning indoors. The boys and men, and a few women, may be found capable of doing some very light out-door work, as clearing gutters, &c., work of little or no value, but which it is desirable for the people to be employed on in their own interest, so that they may not become demoralized by continual idleness. It might be a consideration whether the opportunity might not be taken advantage of for the young boys and girls in relief-houses to receive some kind of instruction in reading and writing. But the matter on which the Commission appear to be anxious to obtain an opinion is whether any kind of works known in the Bombay famine as "Civil Agency works" should be established or not.

One difficulty relief officers have to contend with is the unwillingness of people to leave their homes to go to a distance for labour. Speaking generally, this difficulty does not apply to strong, able-bodied men, but to those who are past middle age. These latter often prefer to remain half-famished at home, and consequently after a time become fit recipients for gratuitous relief. It is for persons of this description only for whom it might be considered advisable to establish "Civil Agency works." I would prefer, however, if possible, to bring work conducted by Public Works agency within a certain distance of the homes of these persons, and to take every available means for inducing them to accept labour on such work than to establish civil agency works. My objections to "Civil Agency works" are those pointed to in the margin of paragraph 2 of the questions of the Commission.

There are also certain persons who purposely let themselves down in physique in order to force the authorities to feed them gratuitously. When I say they let themselves down, I mean that they intentionally refuse to go on the works because they know that after a time, when they become too weak to be able to work, and the authorities fear their contumacy may cost them their lives, they will get fed for nothing. I shall have occasion to allude to these people further on, in question 25 of this chapter.

Mr. Gibbs.—I would have only two kinds of relief: large works for those who can work, and gratuitous relief in villages for those who cannot. I would not advocate moving these people, the sick and infirm, from their villages into relief camps if the village officers can look after them; but we must have relief camps for the wanderers. I would, however, have no small village works; if a man can dig at all, I should say he must go to a regular relief work. The village relief should be from house to house, under the care of village officers, and be confined to those too ill or too old to work, or to those who must be left to take care of the sick and infirm.

Lieut. de Villamil.—Large works are in *all* cases preferable; they can and should provide work for the weak as well as the strong.

If the work require no professional skill to carry out, it is, of course, immaterial whether it be carried out by the Public Works Department or by Civil

Ch. III. Qn. 2.

Bombay.

officers; but as large works will generally be works of permanent utility, they will, of course, generally require to be supervised by an officer of the former Department.

Very *old* people, who have no strong relatives, might be employed on light work under Civil officers near their villages; but in no case should *weak* people be put on these works; they will be much better looked after on a large work. Besides, it appears to me unsound policy to give people *less pay* (as is generally done by putting them on Civil Agency works) *because they are weak.*

Weak people should be separately ganged, paid more frequently, tasked lightly, and they should get the highest rate of pay until they shall at least have had a chance of "putting on flesh." This appears to me to be the more economical plan in the long run, and it is without doubt the most humane.

Convalescent coolies (from hospital or relief camps) should be treated in a similar manner. If the coolies once find they can get work near their villages if they get thin, they will refuse to go to large works. This has caused, I am firmly convinced, a large mortality.

Old people would obviously never be of much use on large works, and, the per-centage being small, it might be advisable to leave them in their villages, but it is a question which is open to argument.

Madras.

MADRAS.

Mr. Martin.—Though no question is *asked as to whether* other forms of relief are possible, I conclude from the small print heading of the chapter, and from the fact that the next question is marked (2), that a question is asked, and as I have an opinion on the subject I give it.

I think that Government might enable people to get a proper sale for their ornaments instead of leaving them to make their own bargains with the chetties.

They could do so in two ways—

(1) Advances might be made of money on the security of jewels up to, say, 50 per cent. of their value, and the jewels so obtained might be stored in the Government treasuries until a fixed time (say a year) *after* the close of the famine operations, up to which time the owners might be permitted to redeem without interest. All the jewels remaining at the end of the time might be sold by auction or melted down and turned into bullion.

(2) The jewels might be bought outright at about 70 per cent. of their cost, and at once melted down or otherwise disposed of.

It is for the interests of Government that people should not part with what property they have much below its value, for say that Government action insures that people can get at least 70 per cent. of the value of their property, and that they can only get 25 or 30 per cent. from the chetties, as I believe was the case in this past famine, it becomes probably necessary that Government must spend the difference, *i.e.*, 45 or 40 per cent. of the value of this property in supporting people who would otherwise have supported themselves, or, in other words, if the people's sale is a little above two millions sterling, the Government spends one million unnecessarily, and many people are unnecessarily harassed and degraded.

Sir W. R. Robinson.—As famine advances large, well-organised works may be extended. But in the earlier stages smaller works will be found less subject to misadventure and more easily arranged. The mere matter of the provision of tools and appliances should restrict early effort to small and more easily provided works.

No children should be permitted to labor throughout a protracted famine on public work. They must be otherwise provided for.

Mr. Price.—I consider that the period, when a famine has determined itself but the people are still in good or fair physical condition, is that at which works of the class under the officers of the Public Works Department can properly be taken in hand, these involving the distance and labor, but *not* the wage test. When matters grow worse, and those who are not accustomed to out-of-door work are obliged, by reduction of strength, to seek assistance, I would open smaller works, such as deepening wells, clearing out channels, and improving village sites; and these might be placed under civil officers, but, as I have said before, I think that the superintendence of all work would be best held by the Public Works Department. The difficulty as regards this would be the necessity for a very large staff, which would be costly. To meet this I would suggest the conduct of such petty works under the direction and inspection of officers of the Public Works Department, civil officers looking directly after the coolies, paying them, &c.

Mr. Grose.—When a famine is assured, large works should be established under officers of the Department Public Works, at which any number of able-bodied men will be employed and the full task exacted. Two or three such works in a district will be sufficient. There should be several small works, two or three in a taluk, at which, though honest work is exacted, the full task is not. These must afford employment to artisans unused to earthwork, such as weavers, and to people reduced by starvation. People must be selected for employment on these smaller works by the civil officers, and civil officers should pay them their wages at least twice a week. The Department of Public Works' system of accounts makes this payment take place at irregular intervals. The organisation of gangs may be left to the Department of Public Works' officers in charge. So far as it is desirable to keep members of the same village together the natural feelings of the people will produce the requisite effect without interference. I have given an opinion in favor of a number of works, because I believe distance is a dangerous test. The mere fact that a relief-work is at a distance induces a man in want of relief to stick to his village, living for a time on leaves or roots, till he gets so reduced that walking the distance to the work kills him. It is only when famine has subsided that the test seems to me safe.

On the great works the system should be much as usual in ordinary seasons, except that hutting and medical attendance must be provided, and that the wages must be sufficient to meet the high prices which will prevail.

On the smaller works the wages should be subsistence wages and vary with the price of grain.

As the famine decreases the smaller works will be deserted gradually. The larger works may be kept up so long as is considered necessary, wages being lowered from time to time.

Mr. Longley.—I am of opinion that civil officers should not be called upon to supervise the execution of work. They have not, as a rule, the requisite training, and are ignorant of the mode of taking measurements. Their time can be more usefully occupied in other items of relief, and their ordinary duties, which must be performed concurrently with the supervision of labor, would interfere with their efficiency in the latter. There have been, and will always be, notable instances where civil officers have been exceptionally qualified for the supervision of relief-works, but such instances must be the *exception.* The question here is whether the employment of civil officers in this capacity is generally desirable, and I

have no hesitation in saying that it is not. Where exceptional fitness exists, it will come to the surface, and be utilised accordingly. Under this head I am referring principally to Europeans. Natives will in a much larger degree be found in civil employ, who are fitted to supervise relief-works; but I maintain that, admitting this, their services in other branches of relief administration would be more valuable.

I consider that in all cases (weavers and such specialists excepted) relief will be more efficiently given on works of permanent * utility, supervised by Department Public Works' officers, subject to the provision that the latter are to be subordinated in every matter not purely professional to the collector of the district. The weakly and those unable from custom, &c., to give a fair outturn may be employed on works less important and simpler in character.

The case of the specialists above mentioned should receive special attention.

Mr. Crole.—As a general rule, wherever possible, and especially when the famine pressure is *not* great, the first division of relief-works (permanent utility) should be employed for the relief of distress. When they fail to absorb the numbers alone, should the other divisions be opened. My experience has been that the breaking of metal along the various lines of road is the most suitable, useful, and economical method of employing the feebler laborers. As they improve in condition, they should be drafted off to the other works.

Mr. Austin.—So far as practicable I would leave all relief-works in the hands of Public Works Department officers. These officers are accustomed to dealing with large bodies of laborers, and should be far better judges of the capacity for work of even an individual cooly than the civil officer, who has probably never had occasion to supervise the actual working of a gang of coolies in his life. Moreover the civil officer lacks the time the supervision of relief-works requires. His Revenue and ordinary office work is not much lessened in time of famine, and his magisterial work is enormously increased. The civil officer, therefore, clearly lacks the two most important items to enable him to supervise relief-works with profit—time and technical knowledge. The care of the very weakly laborers who are not fit to be removed to any distance from their own villages might be left with advantage to the district officers. These might be best employed on petty and simple works, such as the clearing of fresh water wells and tanks, clearing of village sites, and the repairing and improving of village roads.

Mr. Martin.—I have already given my opinion, in answer to a former question, that civil relief works are preferable at the beginning of a famine, especially as acting as guides to civil officers in framing their estimates of distress. When it is once decided that distress will be severe, the Department Public Works should take the works from the civil officers, opening them with reference to their utility and not with regard to the distressed locality whereby the civil officers will previously have been guided. The field laborers, tank diggers, and the class of persons who are ordinarily employed under the Department Public Works on roads will, as a rule, be the persons to be employed on the Public Works Department works.

The village artisans, the Mussulman part of the population, the ruined puttadars who ordinarily employ labor, the Chucklers and Pariahs, men and women above forty-five and children below sixteen will ordinarily be found only fit for civil labor.

My reasons for this division are that the task required on Public Works Department work is sufficiently high to require practice at digging and a knowledge of the way to husband the strength best while using the spade. It is a light task for regular laborers inured to it from childhood, but to persons to whom such work is new it is very distressing, and when prolonged becomes too much for them.

Old persons of all classes (I consider forty-five old for a laboring Hindu) are, as a general rule, unfit for a high task, and it is very bad for young children to have their strength unduly taxed while they are growing.

Mr. Knox.—As a rule, I would always employ the officers of the Public Works Department or other professional men to supervise the execution of works of all kinds. It is clear that in the case of works requiring skilled labor this course must necessarily be pursued. But even in the case of works requiring unskilled labor it is more likely that they would be done economically and well if supervised by engineers. To carry out the earthwork on a road is not a work requiring much skill, but the experience of the last famine has shown that even this cannot be done properly by unprofessional men.

2. It is not an economical use of the agency at the disposal of Government to employ men out of their proper sphere, for their capabilities are not then brought out to the best advantage. Besides this the Revenue officials of a district have generally so much of their own work to do that if more special work be put on them, the ordinary administration of the country must suffer.

Mr. Jones.—At a very early stage of the famine I think civil relief-works will best suit the circumstances of the population, and even here, if professional supervision can be obtained for the work being turned out, I think it will be all the better. The ryot classes, especially those actually engaged in cultivation and looking to that alone for the means of subsistence, would prefer, when driven by necessity, to take any work in the neighbourhood of their homes, so as to be able to take early advantage of any improvement in the season for the cultivation of their lands.

Mr. J. W. Rundall.—Large relief-works are suitable for all classes of the agricultural population accustomed to out-door labor, smaller works for the poorer ryots, weavers, and petty artisans.

Lieutenant-Colonel Prendergast.—I would select the works from the general appearance of the people. A large work under the Public Works Department is primarily preferable to small works; and it may happen that there are easy portions of the large work where the weaker laborers may work separate from the able-bodied. But where this is not the case, the weak had better be drafted to other minor works.

Major Ross Thompson.—Work of whatever nature, should, as far as practicable, be carried out by the Public Works Department, as they can employ labor to the best advantage.

Sick persons and those unable to turn out fifty per cent. of what they could do when they are in good condition, should be employed under civil and medical officers until they are fit for work under Public Works' officers.

* Irrigation works, &c.

MYSORE.

Colonel Sankey.—As to the general question, which Department should supervise this or that work, or class of people, I have no hesitation in saying that the Public Works Department staff can undoubtedly better employ labour, whether able-bodied or feeble, than any other; but that, practically speaking, when the

Ch. III. Qn. 2 — Mysore.

numbers seeking relief increase with the intensity of famine, they cannot, so far as I have seen, look after all satisfactorily; and a rough sub-division, somewhat as arrived at in Bombay, Madras, and Mysore, according to physique, would, I think, have to be made.

By segregation and a judicious arrangement of the piece-work rates, with the people working in families or village-gangs choosing each their own paymaster, sufficient provision can be made to allow a certain portion of the feeble working with the rest, and thus much may be done without attempting too hard-and-fast a line of distinction; but I am clearly of opinion that, as a general rule, all persons requiring medical attention should be cared for by the Civil and Medical Officers; also that, in practice, people who have fallen to and below 50 per cent. of the normal in their physique had better be under the same agency till fit for work under the Public Works Officers.

As to the suitability or otherwise of peculiar descriptions of work for various classes of labourers, the sub-division must be left entirely to the officer in charge, who, to the women, children, and feeble, would usually assign weeding, collecting or breaking metal or gravel, and spreading the same, carrying earth, water for tramping, &c.; while on the able-bodied would devolve excavation of moderately stiff soil, tramping embankments, or consolidating road-metal, &c.; and on the strong all work requiring the use of the crowbar and sledge-hammer, and work in stiff or hard soil, &c. All but the last operations may be considered suitable for those classes who have not been accustomed to hard manual work—the soft-handed, in fact; but at starting the tasks must be light for such persons.

Major Moncrieff.—If the Public Works Department have establishment sufficient, I think they should undertake all save the smallest of relief works.

If for any reason it be resolved to cover the whole face of the country with relief works, the result will be a degree better than if gratuitous relief were scattered broadcast, but the practical value of such works will be very little. The district officers are sure to be exceedingly busy during a season of famine. The Public Works officers should step in and take on themselves all the organization of labour. As I have already said unity of action between the two is indispensable. The Public Works officer must also fairly grasp the idea that relief works are primarily for the sake of the workmen, and that any measure which interferes with the object of the work, viz., relief, must be rejected, such as petty contracts, infrequent payment of wages, cheap rates, &c.

It is most valuable to have a civil officer to assist the Public Works officer, to help to bring labour to the work to classify it, to see to the sick, the camps, &c.

Mr. Ricketts.—Civil relief works are, I think preferable as a beginning, and in order to pave the way for larger Public Works Department work, when found necessary. In isolated localities, too, where the carrying on of a large Public Works Department work is either not necessary or feasible, then the smaller civil work is a desideratum. When famine is declining and there are only few persons to support, then, too, the small work is advisable. Again, if the strength of the Public Works Department is weak and the civil line strong, then likewise the civil work might claim the preference. In other respects the larger works of the Public Works Department, and for the reasons given in the body of this paragraph, must claim the preference. Length of completion itself implies perfecting of all necessary details. Further, Public Works Department works are preferable in vicinity of large towns where the numbers will not only be great, but there will also be much dodging and cheating.

Colonel Johnson.—It appears to me I have already answered much of this question above. Except for the employment of distressed people, too weak or feeble to be sent to Public Works Department works, no other works should be opened where there are public works in the locality. When relief works are necessary in a locality in which there are no Public Works, and no Public Works officer is available to put in charge of them, they may be placed under a revenue officer, or any other officer specially appointed for the purpose. It is my opinion that all people physically unfit to do a full task should be provided for on a special work, or on a special portion of any work under an officer with special powers to deal with them. These should be drafted off to able-bodied works as they become fit for it, and measures taken to prevent them from going back again. Until this be done, they may be worked or tasked in any way it may be thought proper, but the point to be kept in view is to fit them to work with the able-bodied, and on no account to bring down the able-bodied to work with them. This is in my mind the most important division to be made amongst relief coolies.

Ch III Qn. 3.

Question 3.—Large and Small Relief Works.

Relief-works, again, may be conveniently divided into small and large; that is to say, works employing (say) 300 or 500 labourers for about one month only, and works employing a larger number of labourers for a longer period. Though this division generally corresponds with the division into Civil and Public Works Department works, it does not necessarily do so; a small work might be under a Public Works Department officer, and a large one under a Civil officer. State under what circumstances you consider small works to be admissible, and what the advantages and disadvantages attached to them are at different periods of a famine.

North-Western Provinces.—Concur that the time for small works is at the beginning and end of a famine, when it is an advantage to have the people near their homes.

Bengal.—The great desideratum is held to be the having of works open close to the people's doors, and small works are generally preferred, especially at the close of a famine, except by the engineer officers.

Bombay.—12 officers have answered. The general opinion is against small works under civil agency, which are only admissible at the beginning and end of a famine, and during a famine for the aged and weakly only.

Madras.—Some officers hold that small works are most useful at the beginning and end of a famine, when people should be near their homes for agricultural purposes; others that they are only admissible at the height of a famine, when large works are crowded and water grows scarce, and every possible weapon has to be used in fighting the calamity.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Captain Marshall.—In the earlier stages small works have the advantage of enabling those with large families to find work within reach of their homes. As a rule, unless the whole family comes on to the works, the portion that come must either return to their homes at night or sleep without

bedding. I have found this difficulty impede the progress of some works this year, but still I would rather have the large works and transplant the whole family to the spot.

Captain Home.—Small works are admissible under the following circumstances:—

First.—Where distress is believed to be temporary.—They would be very useful to enable the people to tide over the difficulty, and would have the advantage of giving the people work near home, and of not committing the Government to any great expense. The disadvantage would be the difficulty of supervision, but this could probably be arranged for, either through the Public Works Department, Civil or Municipal authorities.

Second.—Where distress has become an established fact, and is likely to last some time.—At this stage small works should be reserved for the weakly labourers, who are unequal to the task-work which would be exacted from them on the larger works. From this point of view no disadvantages would be attached to them, while the advantages would be the separation of the weak from the strong, the absence of undue crowding, and the power of bestowing more care on them.

Major Jeffreys.—Small works are admissible where the scarcity is confined to one locality or to one or two classes of the community.

Thus, when a famine has begun to show marked signs of amelioration owing to fall of rain and crop prospects, &c., it often happens the cultivating class get amply provided for with advances from the landowners, while the non-agricultural class who live in villages—the Koris (weavers), Juláhas (weavers), Chamárs (leather-workers), sweepers, dhobis, dyers, cotton-cleaners—are left wholly destitute, because the community cannot afford to employ them. I have seen distressing cases of this after the worst effects of the famine on the purely agricultural class have passed away. On such occasions small works conducted by district officers, when the labour test would not be strictly applied, would be peculiarly beneficial.

Mr. Sandys.—Heretofore drought alone has rendered it necessary to start relief works in this district, and the distress has always lasted more than one month. The only circumstance then under which small works would be admissible would be at the very commencement of the famine when there was a great and sudden demand for employment throughout the district which could be met only by starting small works supervised by Civil officers in all parts of the district. These small works should be closed as soon as ever the Public Works Establishment had been so strengthened as to be able to take in hand large works of greater permanent utility.

The only advantage in small works is that the health of the labourers is likely to be better than when they are collected in large numbers. They would also afford employment nearer the peoples' homes, and might thus attract some who would take the chance of dying in their villages of starvation rather than seek work at a distance. The number of such, however, would not deserve consideration if a fair rate of wages and not too hard a task were exacted at the larger works.

The disadvantages of small works are obviously that more supervision is required; that they are less useful; and that as soon as the distress is over their completion will be indefinitely postponed.

Mr. Kennedy.—The only period at which small works are really useful is at the beginning and at the decline of the famine. At both these stages it is important to keep the people near their homes, and for this purpose small works are well adapted, as a number of such works can be started in different parts of the district. The only small relief-works commenced last year in this district were at Tilhar and Kant; in the former case they were worked through the municipality, and in the latter under the magistrate. The supervision was sufficient so far as work was concerned, but in the case of the Tilhar municipality insufficient with regard to the admission of all applicants. Complaints were made, with justice, that the Native members of the Municipality who managed the work gave employment exclusively to Muhammadans. In general small relief-works are to be deprecated. They are more difficult to supervise, and it is more difficult to test the necessity for relief, and when executed they are seldom so useful.

BENGAL.

Mr. Worsley.—I consider that at all stages of a famine small works are preferable to large works, because (1) the massing of large numbers of persons is avoided; (2) no demoralization takes place; (3) supervision is easy; (4) halting expenses, &c. are saved. I may explain that in a large work I do not include a large line of road, divided into a large number of sections, each of which is treated as a separate work.

Mr. Henry.—At an early stage of distress, when the State, while offering employment, is anxious to ascertain the extent and severity of distress, works on a small scale are open to the following objections:—

1*st.*—The cost of efficient supervision would, with regard to the value of the work, be large.

2*nd.*—Without efficient supervision adequate tasks are not exacted from the labourers.

3*rd.*—Numerous small works opened in different parts of the district would be likely to render the distance test less operative. At the same time, once the existence of widespread distress is assured, the proximity of relief works would enable the old and weakly (who are most in need of help) to reach them without much difficulty.

With small works less provision for hutting and sanitation has to be made, and it might be found possible to give a lower wage, the labourers being able to supplement what they received by such additions as could be obtained from their village, jungle fruits, vegetables, &c.

Towards the close of famine, at the time when field work recommences, small works near the labourers' homes enable them to subsist, and at the same time prepare their lands and sow their crops; whereas if only large works were provided, those labourers whose homes were at any considerable distance would be unable to look after their fields, as their absence there would entail loss of the relief wage for a period of days.

The result would be that many fields would remain untilled, and the out-turn of the coming harvest would be injuriously affected.

Mr. Kirkwood.—As regards famine relief, and not future benefit, I find no reason for supposing that any advantages attach to small works over large, or *vice versâ*. The advantage of giving people work near their homes is in no way dependent on the size of the work. Supervision can be equally effective in the one case as in the other. The question will be—which is most needed for the permanent benefit of the locality? and, if the work thus selected is situated at a distance from the homes of those to be relieved, another question will then arise as to whether the superior benefit likely to be conferred by the work outweighs the disadvantage of taking the people from their homes. There may be conditions, such as those

Ch III. Qn. 3.

Bengal.

above mentioned, where work cannot, owing to natural difficulties, be provided for the people near their homes. But it must be borne in mind that (especially for Class II. labourers) the advantages of having works open close to their doors is almost paramount. A great proportion of women and children, and very often men too, manifest a great reluctance to leave the neighbourhood of their homes. Often they would sooner die. If no work is opened near a famishing village there is great danger of a heavy mortality. The administration report of the North-Western Provinces for 1868–69 says:—"Experience too "plainly proves that vast numbers will not avail "themselves of any distant sphere of labour. They "will rather die at their homes than emigrate, and "for these, especially for the women and children, "and the men of the families who prefer remaining "with them, work must be provided at near and "convenient localities." These are remarks which such experience as I possess fully endorses. It may often be that, when the distress is not very severe, local Zemindars may be induced to undertake these village works, employing the people to a sufficient extent on tanks and village roads, and (if they desire it) taking advances from Government for this purpose. But where no such public-spirited individuals exist, or where the distress is severer and more widespread than they can cope with, Government must step in and open such works wherever they may be required and no influential resident is already meeting the demand.

Bombay.

BOMBAY.

Mr. Hewlett.—For Civil agency works, if such are established, I think the old and infirm should be selected, but I would much rather have at each large work supervised by officers of the Public Works Department a gang into which all such could be classed. Less work, of course, would be demanded of them, and they would be under daily medical supervision. I think, too, at these large works there might be an artisan gang, where persons manifestly unfitted to work at earthwork might be employed.

General Wilkins.—Small works are admissible and convenient at the commencement of a famine, but as my opinion is in favour of placing all works with a labour test under the management of Public Works officers, it is unnecessary for me to discuss the question raised in this paragraph.

Mr. Propert.—Small works are undesirable except for the purposes noted in the last section. The advantages of them are that the people can be better and more carefully looked after. The disadvantages chiefly consist in the increased number of separate establishments required for their supervision.

Mr. Norman.—I consider that at no period of a famine is a small work admissible if a large one can be undertaken without inconvenience. A large work costs less for supervision. The best works for relief purposes are the excavation of irrigation canals and the construction of earthworks for railways and roads. Such works can be opened up along a long line at the same time, and this enables the labourers to be housed in different localities, instead of all being crowded together in one spot.

Mr. Spry.—I think small works should only be undertaken either when it is expected that the distress necessitating relief will be of short duration, or when famine being on the wane and large works completed, people will have to be employed for only a short time longer. Small works during the height of famine only give the maximum of trouble with the minimum of results, for they have to be so numerous that they cannot be properly supervised.

Mr. Charles.—I do not think small works are ever desirable, except to fill up the time before a project for a larger work can be got ready. A Civil work at a mustering centre ought to be large enough to occupy 500 labourers for several months. This might be the case on quite a small tank or road, as the only class of labourers who ought to be on Civil works, viz., very weak or diseased persons, can do but little, and the use of the Civil work is more the maintenance of discipline and the prevention of overcrowding in the houses for gratuitous relief than in carrying on work rapidly.

Mr. Percival.—Opening small works encourages the people to refuse to go to the large works. As soon as it is certain that there will be large numbers to provide with labour, it is better to stop small works, but the large works should not be too far apart. If no irrigation tank, railway, or similar work is available within 40 miles, a road should be opened.

Colonel Anderson.—Small works only expedient in the very opening when famine is doubtful and numbers small. If large numbers have to be provided with work the supervising organization will be strained to the utmost, and must therefore be concentrated.

Mr. Robertson.—My experience during the late famine has made me a very strong opponent of works under Civil agency, and I would not open any such works unless compelled to do so as an emergency. Of course this does not apply to Civil agency works for the aged and unfit. There are no advantages to be obtained by small works under Civil agency; they lead to wholesale fraud and confusion.

Small works under the Public Works Department may with advantage be opened when the intensity of a famine is a matter of doubt, and as a purely tentative measure, when people will not go to long distances as they require to be near home. At that time they long to hurry to their homes with the first good fall of rain. Again, small works may to a limited extent be opened when a famine is passing away, and as a means of employing the few who then require relief, but who will of their own accord move away on the first favourable turn in affairs.

Mr. Bosanquet.—I have above explained why I think that in addition to large central works under Public Works agency, smaller works under the same agency may be permitted. I have also explained that I would if possible avoid works under Civil agency if of a nature to require professional knowledge and supervision, works which, having to be estimated for beforehand, have to be tested afterwards in order that their value may be ascertained.

Lieut. de Villamil.—Small works have every disadvantage and no advantage that I am aware of either for the coolies or Government.

On large works (where there is presumably a resident officer):—

(i.) Payments are more regular.
(ii.) Shelter is probably better.
(iii.) Arrangements for the sick are better.
(iv.) Sanitation is better.
(v.) Food supplies are more regular, probably better and cheaper.
(vi.) The inspection of the coolies is facilitated by the concentration; sick people being removed to hospital, and specially treated.
(vii.) There are not the same facilities for swindling by the subordinates.

On small works (presumably under a native subordinate), which are necessarily scattered, extortion

and rascality frequently—I might say generally—run riot; if a cooly get sick he is lost sight of, gets no pay, and frequently dies of starvation.

I know many cases where this has actually occurred.

Mr. Keyser.—I would have a few large works under the Public Works Department so situated, if practicable, that no distressed village should be more than twenty miles from a work. Instead of Civil agency works for the weakly labourers, I would have weak gangs for those who could not do a full task. There may be people who, though they can do a little work, are unable to go far; and for these it might be necessary to have small local works; but I would avoid them as much as possible. I allude to such people as the very old, women with a lot of children and no male protector, families of village servants, &c. We paid the village servants 2 Rs. a month, on the ground that their usual receipts failed in the famine; but that did not support their families. We employed such people on simple works like clearing out tanks, &c. "Direct relief" we divided into two classes: those who are able to be moved into relief camps, and those who are physically incapable to move or be moved, and who must be fed in their villages. I had a camp for every ten or twelve villages—not enclosed—they mostly got lodgings in the village; but at one place I hired houses for them; at two other places I built huts. The greatest number was 600, but I generally had 100 or 150 in these relief camps, and this includes travellers. They were fed once every day with cooked food; a woman got 12 oz. of flour baked in chuppatis and 4 oz. of dal; a man got 15 oz. of flour and 4 oz. of dal. The Belgaum ration gave a man 18 oz. of flour, but I found it was more than people could earn on Civil agency works, so I reduced it. The children's rations varied with their ages. I found by experience that this ration was enough for men who did not work and were not emaciated at first.

MADRAS.

Mr. Price.—I consider that at the beginning of a famine and after it has passed the climax and is on the decline large works are preferable to small.

The chief reason for this view is that such small works as can be found for a famine are, as a rule, not profitable; that, providing efficient supervision being difficult, the people employed upon them can shirk far more easily than on large works, where they can be more closely watched; that, as they are small, they do not afford occupation for any lengthened period or for any large number of persons, and that enforcing the distance test in regard to them cannot be effected without harassing the people, that a much larger staff for paying and accounting is necessary, and that when they are finished it takes much longer to inspect and get the accounts adjusted; lastly, that they are not likely to be of such permanent benefit or profit to the State as larger and properly matured works. I am of opinion that when a famine is at its worst period, and it is necessary to secure water-supply for drinking purposes, and to afford, to what are usually the non-laboring and weakly classes, help without allowing them, more than is possible, to fall into the idea that the State will give aid without an equivalent, that small works are admissible. I would not, under any other circumstances, employ them as a means of relief.

Mr. Grose.—I have stated that numerous small works are wanted for laborers who are not able-bodied as soon as famine is assured. Before famine is assured there should be a few such works near the tracts where the distress is greatest. They will be the most economical way of assuring safety at that time. As the famine diminishes the smaller works will be deserted one by one, and may be closed; only want of professional supervision can justify putting a large work under a civil officer.

Mr. Longley.—Except where the supply of drinking water for man and beast is insufficient (and in this case the supervision of the civil officer will suffice), I am of opinion that small works, though in some ways desirable, are, as a rule, objectionable. In the case of temporary local distress, where small works would not be in danger of overcrowding from non-distressed villages, small works may be desirable, but the ordinary budgeted works under Public Works Department, local fund board, or municipality ought to be sufficient to meet such cases. But where famine has been clearly diagnosed small works must be *minimised.* So long as native nature remains what it is, the great mass of those needing relief will not leave their villages to go to a distant work. They will stay and slowly starve and die at home, or, when reduced below the standard physically needed for work, will take to wandering and become demoralised, and will oscillate between wandering and camp life; when sent to a relief-work they will generally desert as soon as sent.

The objection to small works is that they are too scattered to admit of adequate supervision, and so small that by the time a gang is fairly settled down to work the work is closed, and the coolies have to be shifted or left to shift for themselves. The local officers are caused endless anxiety by having to provide relays of such works, and there is no time to estimate for them properly, while a change of weather may render all attempts to check measurements impossible. Again upon small works it is impossible to provide proper medical assistance for the sick and weakly, and the opportunities for fraud are endless. But the chief advantage—and it is no light one—attaching to such works is that, if properly supervised, they would afford relief (in a form which is not demoralising) to a great number who will never comply with the distance test, and, if the money and supervising staff were available, I would say that no system of relief by providing labor would be complete unless some labor were provided for all *weaker vessels* needing it within easy walking distance of their villages. Improvement of village sites, making or repairing local roads, repairing small tanks or ponds, &c., afford employment at least for a time, say a year. When small works are exhausted the laborers must be moved to large works. I would not confine the former (small works) to weakly alone. This would prevent premium on low condition.

Mr. Crole.—Small works are only admissible when the famine is at its height. The difficulty about supervision and payment renders the opening of such works very unadvisable, if avoidable.

Mr. Martin.—I consider small works admissible only at the beginning and close of a famine. At the beginning for reasons I have already stated, and at the end to enable the officers in charge to apply the test of distance to persons who may appear to be clinging to the works from habit, instead of returning home to resume their ordinary occupations.

In the height of a famine they are very objectionable because of the extreme difficulty and expense of supervising them properly, or guarding against their being altogether monopolised by persons of the immediate neighbourhood. People soon learn that the test of distance is being applied, and they alter the place they come from without hesitation.

Mr. Knox.—This is chiefly a question of supervision. Provided that sufficient work was provided for those in need of relief, it would be immaterial to the people themselves whether there were a few large works or a greater number of small ones. But it is obvious that, in the former case, it would be much more easy, at less cost, to ensure regular and effective supervision, for small works would probably be scattered all over the district and the supervising staff would have to be very large. Further, during the height of a famine it would probably be necessary to make arrangements for a supply of grain, &c., being brought to the works, for giving medical aid, and for providing shelter. All these matters could be more easily arranged and economically carried out the fewer were the number of the works.

Mr. Fawcett.—Small works are only admissible in my opinion in three cases. These are—

(*a*) In the beginning of a famine when no large works are ready, and it is absolutely necessary to give the people some employment until they are.

(*b*) At any part of a famine when any small work appears to be so urgently needed, on sanitary or other grounds, as to overpower all other considerations.

(*c*) At any part of a famine when employment has to be provided for people physically unable to do the tasks set on large works under Public Works Department officers.

In these three cases small works are necessary. The following are the disadvantages attaching to small works so far as they occur to me :—

(*a*) *Difficulty of proper supervision.*—Difficulty of proper supervision, at least without a staff several times larger than what would be required for large works. If all the works in a taluk where distress is severe are small, there must be a great many of them scattered all over it. If some are large and some small, the difficulty will be lessened but not taken away.

(*b*) *Not of permanent utility.*—Generally speaking small works are not of permanent utility.

(*c*) *No distance test.*—If a small work is opened, it is in all probability opened near the homes of the people supposed to need relief. Thus there is no "distance test." If nothing but small works are opened, or if a great many small works are opened, they are scattered all over the taluk, probably one in or near each village. Thus many people would probably come to the works there who would not care to go ten miles to them, and who might therefore be assumed not to need relief.

(*d*) *Expense in transferring when each small work finished.*—Extra expense and delay in constantly transferring the coolies from one work to another as each small work was finished.

(*e*) *If only small works, constant trouble.*—If only small works were carried on, there would be constant trouble and uncertainty in looking out for new ones to take the place of those in progress. This however is an extreme case.

Mr. Jones.—Small works, I consider, will be of use at the beginning of a famine, especially if it is doubtful whether an improvement may not take place. It tends for a time to keep the people in their usual places, so to speak, watching further results. As the famine increases in pressure the able-bodied poor should be drafted to larger works, purely professional agency works. The small works, if numerous, become difficult to control and work with efficiency.

Mr. Homan.—At the beginning of the famine, in order to give the people confidence, I think it would be best to establish a number of small works, situated so that no persons needing relief would have to travel more than ten miles from the villages in which they reside, and to pay most particular attention to the regular payment of those employed on them, which should, if possible, be witnessed by an European officer whose special, though of course not exclusive, duty it should be to travel from gang to gang and see that the coolies were paid on specified days and at specified hours, the days and hours for each gang being of course different. This work of merely witnessing and certifying to the payments might, perhaps with advantage, be performed by a civil officer.

Mr. Rundall.—All relief-works should be under the supervision and charge of the P.W.D., and, as far as possible, should be large works; the only exception I would make is in favour of clearing village wells and tanks for drinking purposes, for which works a drought gives favorable opportunities; these could be superintended by civil officers, and might be carried out by a class of laborers who would not, till the last extremity, go to the distant relief-works. These works should not be started hastily or indiscriminately. The large works should be first organized and started, and then a few selected smaller works to give relief to those left behind in villages, and there should be rigid drafting out from the smaller to the larger works.

Lieutenant-Colonel Prendergast.—Small works are admissible when there is general distress, and when this is fully developed, large works are by that time well in hand: those who are strong and can do a good task work there, and if there be a large work close to their village, and weak and sickly may go to it also. But if there is no large work within some miles, then the inefficient laborers may, with advantage, be admitted on small works near at hand. This holds good at such time as the famine is fully declared. A large work may be put in hand at the beginning of distress to give employment to all within some distance. But when the numbers are sufficient, then other works must go on as well; and the number of small works will depend a good deal on the professional agency available for supervision. The disadvantage of small works is that time is spent in going from one to another to inspect and check measurements; there must be separate minor superintendence, involving additional expense; there is more work in the account department checking calculations; there is trouble in sending to make payments.

Major Ross Thompson.—On earth and road-works the description of work should vary with the capacities of the people employed—strong men to use the pick, spade, and crowbar; weaker men, women, and children to carry earth, break up metal, spread gravel, &c.

Small works may, with advantage, be undertaken under civil officers in the vicinity of villages, so as to keep a supply of labor on the ground to carry out the ordinary agricultural operations of the seasons. The rates paid on such works should never be high enough to attract labor from agriculture.

MYSORE.

Mr. Ricketts.—Small works are admissible in isolated localities, or where there is purely an agricultural population, as tentative measures, when famine is declining and there are but few to support, when there is likely to be delay in starting the large work and when such small works are really useful and calculated

to be of permanent utility, also at times of sickness, and when there is risk of small-pox and cholera contagion by the congregation together of large bodies of persons.

In the beginning and decline of famine, small works appear to have the advantage; but at its height when civil officers are engaged in a multiplicity of duties, especially in seeking out distress, relieving it, or relegating it to works, to say nothing of the then heavy work of dealing with crime, then I think large works have a decided advantage. At the height of a famine the numbers of people resorting to works increase enormously, and then the trained organization of the Public Works Department in dealing with numbers comes into play.

I would here add that I consider there would be a serious defect in this trained experience if it proved incompetent, under the pressure of circumstances, to deal with the feeble, or to admit applicants to relief or to classify and gang them.

Colonel Johnson.—I should consider small works admissible, 1stly, when large works are not procurable; 2ndly, when, owing either to paucity of numbers, or the weakly condition of the people, they would suffice for all requirement; 3rdly, when, owing to probability of rain or other reasons the ryots are unwilling to go far from their villages, and it is inexpedient to induce them; 4thly, when cholera or other contagious diseases are prevalent and it is undesirable to assemble the people in large numbers. Their advantages are that they are, as a rule, easily procurable, easily started, cost little, and can be stopped at a moment's notice, without entailing any great amount of loss. Their disadvantage is the difficulty of providing competent and trustworthy supervision for a number of scattered small works. A number of small works near together, such as a group of tanks, would be as useful as one large work. The larger works would, as a matter of course, be placed under Public Works officers when available.

Ch. III. Qn. 3.

Mysore

Question 4.—Tests for Admission to Works.

Ch. III. Qn. 4.

The three main tests hitherto adopted to justify the admission of persons to relief works are:—

The Distance test.—*Under which the need of relief is proved by willingness to go a certain distance to obtain it.*

The Wage test.—*Under which the need of relief is proved by willingness to accept a wage which is little more than a bare subsistence.*

The Labour test.—*Under which the need of relief is proved by willingness to do a fair day's work according to the strength of the labourer.*

Would you propose to adopt any other tests than these? If so, describe them. Would you reject applicants for labour because their appearance, clothing, or the ornaments they wear, do not indicate penury? If so, would you do this equally at the beginning, during the height, and in the decline of a famine?

North-Western Provinces.—The tests are regarded as sufficient. One officer would add that of cooked food. Government are not bound to relieve persons who have any property left.

Bengal.—The civil officers would not add any test, and would generally reject the distance test. Engineer officers who have had famine experience in Madras are in favour of the distance test. Applicants should not be rejected because their appearance or ornaments do not indicate penury.

Bombay.—13 answers. The tests are considered sufficient as to the rest of the question. Opinions divided, but many officers would not reject applicants for work who are ready to submit to the tests merely because their appearance shows that they have some reserve of means. Those rejected for wearing ornaments will naturally return after leaving them at home.

Madras.—Twenty-eight European and 3 Native gentlemen have replied.

Opinions are almost unanimous that the three tests named are quite sufficient, and that all applicants who submit to them should be received on relief works, on one being rejected on the score of his being apparently well off.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

Mr. Sandys.—No other tests are required. No applicants have appeared at any of the works in this district whose appearance, clothing, and ornaments they wore did not indicate penury.

Those who were well clad and had ornaments would in this district certainly dispose of their clothing and jewels, and live on the proceeds thereof before they sought employment on the works.

Mr. Cornwall.—I think there is no necessity for any more tests; and consider that all applicants for labour should be refused relief unless it is satisfactorily established that it is absolutely necessary to give them the means of keeping themselves alive. I do not think the Government is called upon to give relief to any person as long as he has a single pice left, or any property, except his ordinary clothes and cooking utensils. Ornaments ought most certainly to be parted with before coming to a relief work. It is assumed in the preliminary paragraph of Chapter III. that "the State is responsible for offering the means of support to all persons not able to provide for their own maintenance," and I certainly think that the tax-paying public is entitled to demand as a right that Government should not give the slightest relief as long as the applicant had anything he could sell or pawn. I should apply this principle throughout the famine.

Mr. Stoker.—Under the head of "wage test" I would insert payments in cooked food. This I believe to be a most valuable and crucial test. It will not, I think, be accepted by any but the really distressed *when accompanied by exaction of a full day's work.* It is open to the objection of being contrary to the prejudices of the people and offending caste scruples.

There is not, I believe, anything in the Hindu religion which necessitates such a test operation as an exclusion. No caste or clan need refuse food properly cooked and distributed by Brahmans. And if at the outset individuals be here or there found to prefer starvation, so much the worse for them. The State has discharged its utmost duty when it has afforded each individual a fair opportunity of obtaining subsistence. Government does not undertake to relieve its subjects on their conditions, but on its own.

The only other test I would propose is the workhouse test. This should involve residence within an enclosure, regular work, and rations of cooked food.

Ch. III. Qn. 4.

Bengal.

BENGAL.

Mr. Worsley.—I would not adopt any other test than those mentioned in this question. I would not reject applicants under any circumstances. Decent clothes to the better classes are like cleanliness, &c. to ourselves. With their decent clothes they would put off their self-respect.

Mr. Magrath.—I consider the acceptance of wages, which only give a bare subsistence, a fair test. I would not propose any other test, as all those attempted have been perfectly illusory. I would not refuse applicants on account of their appearance. As a matter of fact they always pledge their ornaments before they come to work. The re-appearance of the ornaments, brass vessels, &c., and the appearance of better clothes, always show that the end of the famine is approaching.

Mr. Metcalfe.—I would not propose to adopt any other tests than those enumerated; and of those stated, I would adopt, as a general rule, no other than the labour test.

I would not reject applicants for labour because their appearance, clothing, and ornaments they wear are not indicative of penury; for this reason, that, as soon as it became known that decently clad persons would not be admitted on relief works, they would conceal and bury their ornaments and appear in miserable clothes and present themselves for work. Any restrictive order of this kind is sure to be met by subterfuge on the part of the labourers. In a country where grain is scarce, the possession of ornaments is no indication of the absence of distress in a family; for the reason that, if there is no grain, both gold and silver are useless; if there be grain, the holder of the grain is afraid to sell, for the knowledge that he possessed it would become immediately known, and his granary would be plundered and his house burnt. In the Poopree relief circle in Behar a Zemindar, who, in March, before the policy of Government was disclosed, vowed that he had no grain in his possession, was found subsequently to have in store the surplus crops of 17 years, and although he might have made a considerable profit by sale when rice was at 12 seers, yet was, through fear, restrained from even admitting the possession of grain.

Mr. Kirkwood.—I would adopt no other test than the three specified, namely, the distance, wage, and labour tests, and, out of these three, I would entirely reject the distance test, and boil the other two down till nothing is left of them but the very small, yet efficacious, remnant comprised in the two words "task-work." That task-work should be by the piece, so much pay for so much work. Task-work at the rates which I have already mentioned, namely (for Public Works Department works), ordinary rates until food is about two and a half times its ordinary price, then an increase of 25 per cent. in rates, and when the price of food is approximately quadrupled an increase of 50 per cent., while light-labour gangs should be paid at rates from 40 to 50 per cent. higher than those at the same time in force on the Public Works Department works, I should deem a perfect test of fitness.

I think rejection on account of the physical well-being of the applicant, or for the good clothing or ornaments he or she wears, to have, whenever tried, been condemned by results. From personal experience I cannot speak, but I think the chronicles of 1877 leave no doubt that such arbitrary rejection much increased the mortality.

Mr. Armstrong.—The distance test is, perhaps, the best of the whole—it proved so in Madras—especially if it is combined with the labour test. When the people do not object to the first, and accept the second, it may be safely inferred that the distress is real.

People apparently well-to-do should be rejected in the first stage of a famine, admitted in the second, and dismissed in the third. As regards the wage test on famine relief works, it is indispensable that the rate of wages be 25 per cent. less than the ordinary rate, otherwise people will be attracted from districts where famine is not raging, as there is always a considerable amount of labour ready to wander to any place where they know large works are in progress.

Central Provinces.

CENTRAL PROVINCES.

Mr. Nicholls.—Certainly not. I would make the labour and wage tests quite sufficient to gauge the propriety of each application for work. Under this guarantee I should be glad to save the people from the necessity of selling or pawning their clothes or trinkets for petty advances taken at fearfully usurious rates.

Bombay.

BOMBAY.

Mr. Hewlett.—I think the State is not bound to maintain people who wear gold ornaments or who are able to maintain themselves, but I think also it is cheaper for the State if the mass of labourers have a little ready money of their own to fall back on.

Colonel Jenkin Jones, R.E.—No other tests suggested. The possession of valuable ornaments, which might be sold for the purchase of food, would be a good reason for refusing employment on relief works.

Mr. Propert.—The present tests are, in my opinion, quite sufficient. The distance test, while in some ways useful and likely to save Government money, may cause extreme suffering, and must, I think, be called a measure of severity. If the truth were known, it would, I dare say, be found that many lives were sacrificed by the fact of employment and succour being far away, in the case of those who refrained from leaving their homes till forced to do so by actual hunger.

I should certainly reject applicants for labour whose appearance, clothing, or the ornaments they wear do not indicate penury, unless the said applicant could satisfactorily account for his respectable appearance. I do not think that any particular stage of a famine ought to affect the rejection or admission of such a person.

Mr. Norman.—I can suggest no other tests than those suggested in this question. I would not reject applicants for relief because their appearance and clothes did not seem to indicate poverty. Such persons should be drafted into the labour gangs and a fair day's work exacted from them. The wearers of ornaments, if they possessed more than a nominal value, should be rejected. Greater stringency might be adopted at the beginning and end of a famine than during its height.

Mr. Spry.—I consider the distance, wage, and labour tests quite sufficient. Provided applicants submitted to the above tests, I most certainly would

not reject them because their appearance, clothing, or ornaments did not indicate penury. I think it is most impolitic to strip a man to the very skin before he is admitted to relief; the consequence being that though he may not come for relief so soon, yet when he does come he is so beggared that on the termination of relief he has not the means of supporting himself. For instance, in the case of a small cultivator it is far better to let him keep a small reserve of his property, so that when the cultivating season comes, he can start afresh, than to make him dispose of everything so that he is unable to cultivate his holding when the time comes.

Mr. Charles.—I can suggest no other tests than those mentioned. I certainly should not reject applicants, if willing to undergo the tests, because their appearance did not indicate penury, for if a person is willing to go a long distance and live in an uncomfortable hut and submit to discipline which is always galling to the natives with their careless and unpunctual habits, it shows they must be in want of help, and it seems bad policy as regards the future to strip the people of all resources before admission, as the conclusion of the famine would find them helpless to get along during the few weeks till ordinary habits of life and work are resumed.

Mr. Moore.—I do not propose any other tests. I believe those mentioned to be sufficient. I would reject applicants for labour if their appearance, clothing, &c. did not indicate penury at any time during a famine.

Mr. Hamilton.—I think if people are found willing to come and work regularly throughout a season and accept the wages sufficient to purchase only that amount of food required to keep them in good health, the distance test might be disregarded, provided only that their work is too far from their houses to enable them to return after their day's work. All labourers should certainly be required to bring their families and live at the work. As to ornaments, I never found any labourers with other than copper imitation jewellery. But if any should be rejected on account of having valuable ornaments, they will merely leave them at home and come the next day without them. I should look at the fact of labourers working with ornaments of value on them as indicative that the wages were too high.

Mr. Percival.—No other tests are needed. No one should ever be rejected who submits to the tests.

Colonel Anderson.—No other tests than those named appear feasible. I would at no time give work to those whose appearance did not give reason to believe that they had not means of procuring subsistence from their own resources.

Mr. Robertson.—I would not adopt any other tests, but in every case the district officer should be doubtful about granting a labour ticket to a person whose appearance, clothing, or whose ornaments made his destitution a matter of doubt. He should promptly inquire into the condition of the person in question, and admit him if he should be found a fit object for State aid.

I would do this equally at the beginning, height, and decline of the famine.

Mr. Bosanquet.—My opinion regarding the distance, wage, and labour tests will be stated further on. I would never at any period of the famine refuse to accept any persons as labourers, whatever their appearance, if they were prepared to do a fair day's work for a fair day's pay.

Lieut. de Villamil. — If a cooly accepts famine wages, lives away from his home, and does a fair day's work *he is in distress.* This should be a famine officer's "definition" of a person in distress; exceptions will only prove the rule.

"Primâ facie evidence of distress" (the generally accepted first test, vide G. O. Madras, No. 2,847, of the 24th September 1877, sec. 21,) is an absurd test. Admittance to the work should be on "free trade principles," *i.e.*, without tickets from Civil officers; it should be on tickets *from the officer in charge of the work.* By all means let Civil officers search out and send people to the works, but their tickets should not be indispensable.

As this is entirely opposed to the views of the Bombay and Madras Governments, I will explain my reasons for this opinion :—

1st. Whatever the theory may be *practically* it is *not* universally known that Civil officers' tickets are necessary.

2nd. If a Civil officer happen to be 20 miles away from a work this order entails a march of 40 miles to qualify for admission; with a weak person this possibly might mean death, and would always be a very great hardship.

3rd. It opens the road for swindling or extortion. A cooly is on the work; the head cooly says, give me four annas or I dismiss you, *i.e.*, give me four annas or I cause you to lose two or three days' pay and to march 40 miles; the money is generally given; or a cooly requires work, and rather than go 40 miles for a ticket he bribes the head cooly to put him on the work, and is ever after in his power; of course he loses a per-centage on his pay.

The *theoretical cooly* would of course know the proper course to take in these cases, but I do not profess to deal with any but the unsophisticated cooly *as he is* and not *as he should be.*

I would not reject applicants because they had jewellery; it should not be the object of Government to reduce the people to penury before giving relief. A small piece of jewellery may be the means of saving a whole family from starvation; it will act as a "buffer" in case the arrangements for payment break down or are delayed. If jewellery be seen on a work, see if the three tests *are being enacted*; it seems, improbable that people with means will resort to famine works if the tests are rigidly enforced.

Mr. Keyser, Poona.—I think our system of relief was generally good, and there is no fundamental change I would advocate; but we improved as we went on, with increased experience, and our changes were in the direction of severity. At first people crowded on to the Civil agency works, and when we introduced the tests they fell off, which I take as a sign that they were not really in want.

MADRAS.

Mr. J. G. Horsfall.—I do not consider that any other tests are necessary other than those of piece or task-work and wage test; the distance test is objectionable as likely to cause the splitting-up of families and to foster the habit of wandering.

No—not if they are willing to accept the conditions imposed. The mere fact that their appearance is such as to indicate that they belong to the non-laboring class points to dire necessity compelling them to come to works which they would never but for this do. Their clothes they must wear whether fine or coarse; and probably they could not sell them if they would. Jewels of course are different. It will, I think, be cheaper in the long run to allow such

persons to obtain relief by work; if debarred on this ground they endure privation and starvation and become emaciated and unable to work and eventually a dead charge upon the State. The rule applies equally at the commencement and height of famine. At its decline they would naturally be the first to turn adrift. Indeed they would not need to be turned away, but would leave State work immediately when other opportunities offered.

Mr. Price.—I do not know of any other tests than those mentioned which, as tests, could be with any benefit employed. We tried in Cuddapah certificates of being in actual want of employment, which were granted by the heads of villages. These succeeded to a certain extent, but we afterwards found that they were made an article of trade and could be readily obtained on payment of 4 annas, and they were accordingly abolished. The test of whether a man was a puttahdar or not could not be fairly used. There were many people who had to come upon works who held puttahs of larger amount than the average, but who had been unfortunate in losing their cattle and in not having been able to cultivate their lands for want of rain, as was the case in the black-cotton-soil taluks of Cuddapah; but these remained, as a rule, only until rain came, and then left not to return. I would not reject any one on account of appearance, &c., without making due inquiry. A great many persons who ought not to have been taken on to works no doubt got on, but I have seen people wearing good cloths who proved to be really in want, the cloth which they were wearing being their last, and what had been, in better times, their holiday garment.

Mr. McC. Webster.—(*a.*) I would not propose to adopt any other tests than the wages and labor tests. I will give my opinion with reference to the distance test in answering.

(*b.*) I would not reject any applicants for work even if their appearance, clothing, or the ornaments they wear did not indicate penury. Relief works are not popular, indeed they are the reverse, and the "wages" and "labor" tests should be sufficient to keep away the non-necessitous. As regards their appearance—it is the object of Government to keep the people in health and strength, not to let them get emaciated and then send them to works. It has been our greatest difficulty to get people to go to the works before they became emaciated, and therefore it should be a matter for congratulation to find people in tolerably good condition coming on to works. The white cotton clothing worn by the people in this district is not any criterion of a man's circumstances; and even if a man on the works does happen to have a new cloth, I do not think this fact can be taken to show that he is able to support himself and his family.

As regards the ornaments—I doubt very much whether many people on the works have ornaments other than the "tali" and "koppu"—the one, the necklace, denoting marriage and corresponding to the wedding-ring; the other, the earring, almost invariably worn by females. I do not think Government should refuse to afford relief to persons until such ornaments are sold, any more than they should force women to sell their wedding-rings. In the very exceptional circumstances of a person being found on the works with other valuable jewelry, *i.e.*, jewelry worth more than a few rupees, I think some inquiry should be made before the wearers are turned off works. How can we tell that the man or woman is not keeping these jewels to sell in a more prosperous season to purchase ploughing-cattle or seed-grain? Perhaps their lands are waste, their cattle dead of disease, and they themselves on the works tiding over the time until a good fall of rain will enable them to plough their fields, and then the sale of the ornaments will provide the hire of bullocks and the seed-grain. I only give this case to show that persons wearing jewelry should not therefore be turned off or not to works.

Mr. Ghose.—The three tests enumerated are the only ones practicable, and of them the distance test is so dangerous that I would exclude it, except at the end of a famine. No rule should be laid down as to refusing to give relief to the wearers of ornaments. The object of the State is to prevent people from being reduced so much that they will be unfit for work and probably die, and experience shows that in numerous cases great privations will be suffered before cherished ornaments are parted with. Nevertheless, the fact of the possession of ornaments will be a relevant fact in the inquiry conducted by the civil officer as to whether any particular applicant is a fit subject for relief.

Mr. Crole.—In addition to the tests named, I would have a "*presence on the works test.*" This is peculiarly required for laborers from towns and large villages, who, if not required to live at the work, resort to works near their homes and remain on them after the necessity for relief there has passed away. The existing rates enable a family to earn a relatively very high wage.

Mr. Martin.—I would not propose to adopt any other tests.

Men possessed of landed property may in a few instances come to work submitting to the tests, but they must either have peculiar relations to the land or have very heavy interests at stake which it will be better to allow them to protect than to turn them off work.

I would reject at the beginning and in the decline of a famine from both Public Works Department and civil works, persons who had *valuable* ornaments, but not those who have only trinkets of no value.

At the height of a famine, I would not reject persons for their ornaments, but I would provide them with the means of getting a fair price for their ornaments as I have mentioned in Question I. of this Chapter, and I believe that this will keep them off the works altogether if the distance test is properly applied.

I would reject persons from their appearance and clothing only when I was applying the preliminary test on a single work in the distressed locality. Once I had decided that severe distress was setting in and that works enough to enable the tests to be instituted were ready, I would reject no persons on account of their appearance or clothing until it was quite plain that the famine was over and that they could lead their usual life in their villages.

Mr. Austin.—The three tests are in my opinion amply sufficient. There is however one more test which might be applied, but which to my knowledge has never been tried, viz., the giving to relief coolies cooked food, condiments, &c., in lieu of money payment. There is one obvious advantage in this plan, viz., that no one would come to work for mere food who could possibly subsist in any other way.

The other advantages are (1) that the opportunities of swindling on the part of subordinates would be greatly reduced; (2) that the cooly would know exactly what he was working for, as there would be no fluctuations of payments as with the money wages.

In carrying out this system the greatest care would be necessary to see that caste rules were strictly attended to, and that the food intended for a certain caste was prepared only by men of that caste. It would be also necessary to see that the food was of the best quality to avoid complaints.

Lastly, a great point gained would be that those who worked would actually reap the benefit. With a money wage a large portion goes to idle and lazy members of the family who will not work for themselves.

It however cannot be denied that this test would be a most unpopular one. But this I consider is rather a

point in its favor, our object being only to support those on relief works who are entirely unable to find employment elsewhere. I would reject applicants for labor at any period of the famine if they appeared to be obviously pretty well off. No hard and fast line can be drawn on this point.

Mr. Lee-Warner:—Emphatically I would reject persons whose appearance does not indicate penury in all the stages of the famine from small village works under Civil Agency. There are quite enough applicants for relief without them.

Mr. Knox.—The three tests hitherto adopted, viz., those relating to distance, wage, and labor are quite sufficient, I think, if properly enforced to prevent any but persons in distress from coming on the works.

2. I do not think that, at the commencement of a famine, people should necessarily be turned away on account of their dress or ornaments. These people might be equally in need of work to get their livelihood, and it would be rather hard to say to them, "You must try and sell your trinkets and put on a dirty cloth before we will receive you." It would be very easy for people to comply with these conditions, and if they do not do so, it may be because they have a little self-respect left. It would be an anomaly if a man was to beg having on ornaments and a good cloth, but it is not so when he comes and asks for work because he cannot get it elsewhere.

3. In the decline of a famine, however, I would unhesitatingly reject such persons being new comers on the assumption that if they had got through the worst of the famine without being obliged to apply for work and still managed to keep their ornaments and wear a good cloth they certainly must have some means of livelihood. Once the height of the famine was passed and things were looking brighter, the longer a man remained away from the works, the stronger would be the evidence that he would be able to last out the famine. On these grounds I would be more particular with new applicants of this description during the height of a famine than at the beginning, and would at least try and have special inquiry made into their circumstances.

Mr. Fawcett.—I would not propose to adopt any other test than the three given in the question.

Lieut.-Col. Prendergast.—When the distance test is applied, as well as the wage and labor test, I do not think any other is necessary. But when a work is opened close at hand, people who are not in need of relief will come to work. There should then be a poverty test. It will be difficult of application; but with the assistance of the Civil Department, some people would be set aside who were known to be not in real distress. People have applied for work in this district, close to their homes; on being offered work at a distance, they at once declined to go. Provided the three tests were enforced, I would not reject applicants for work, because their appearance or the wearing of ornaments did not indicate penury. I think a man might keep a pretty good cloth, and a woman some inexpensive ornaments, and not be forced to part with their last personal effects before being admitted to relief labor. Such people might be kept off in the early stage of a famine, but not in its height or decline.

Captain Awdry.—It is useless forbidding work to the well-dressed people who have ornaments as they would apply all the same, having left their clothes at home and buried their jewels.

Ruthna Sabapathi Pillay.—During the first stage, I think low wages may be made a test, this tending to bring the really needy only to work. This includes full task. In a couple of months, however, the test should be relaxed, and ordinary tests only employed. It is advisable in the first stage to reject men who have good appearance, clothing, and ornaments on. But during the second, and especially in the third and last stages, mere good clothing and ornaments grow valueless and cannot meet with purchasers. In such stages, therefore, it would not be advisable to reject them.

MYSORE.

Colonel Sankey.—Distance and other Tests.—General definitions.—As defined "a man must work "at a distance from his house, not so close that he can "return to it every night.* . . . Every one who is "fed at a relief camp must sleep there." In his Excellency the Viceroy's minute of the 12th August it is observed that "the obligation . . . to go some "distance to work keeps from seeking relief people "who can support themselves otherwise." It was also laid down that "when a work is opened the officer in "charge should take over from the authorised civil "officer every man, woman, and child whom the latter "may send him for employment, *and should decline to take on any labourers not that sent.*"† Again, "as the object to be attained is the relief of the destitute *not the profit of the well-to-do*, a scale of wages "will shortly be issued, and an entire stop must be "put to the system of petty contracts."‡ "As the "financial resources of the State are now tried to the "utmost, it will be necessary as far as possible to stop "all public works which do not meet the above "requirements (*i.e.* furnishing work for 1,000 people "for 3 months); and *you will therefore consider as "cancelled all assignments hitherto made.*" Further to enforce the principle that work would alone be given at relief camps, it was ruled that "all open "kitchens at which paupers receive food which they "can take away uneaten, or which they can eat and "depart, must be abolished."* A few works which would be seriously injured by immediate closure were to be kept open, and even some under civil officers, to provide for not less than 300 labourers each, were also to be retained; but in both cases only to tide over the short intermediate stage before the system of relief, in its completeness as above indicated, could be introduced. Thus while by these arrangements persons arrived at a certain stage of emaciation or destitution, and who were willing to submit to the various tests, were alone entitled to Government aid or work, no able-bodied workman or—the so-called "well-to-do"—were to have any employment. The works giving them such employment were closed.

Impolicy of closing the works against the ordinary able-bodied coolies of the department.—It only requires a slight acquaintance with the circumstances of the native labourer to know that he is much oftener in the hand of the bazarman than possessed of any reserve of savings. It is true that those on the coffee and tea estates of Mysore, Coorg, and the Nilgiris always do save a large portion of their wages, and were at this time (September 1877) denying themselves the necessaries of life for their relations; but to term any of the class "well-to-do," on the commencement of a third year of famine, was surely to misunderstand the true position of matters, and to deny them work was to drive these men, who, of all others, by the good example they had set deserved encouragement, into

* Letter from the Famine Commission in Mysore to the London *Spectator*, dated 28th September 1877.

† Officiating Chief Engineer's circular No. 20 of the 21st September 1877.

‡ Officiating Chief Engineer and Secretary's No. $\frac{1639}{2707}$ of 12th September 1877.

* Chief Commissioner's Order 25th September 1877.

CH. III QN 4. MYSORE

the ranks of the distressed. I fancy, if the truth were known, the only reserves which our ordinary coolies had were the flesh on their bones, and their determination to work for themselves and their families. It had all long been one of the main objects of the department to keep the really able-bodied employed—as not only maintaining themselves but their families—by the piece-work system.

Modification under practical application of the several tests.—In considering generally the subject of the tests, as applied in inaugurating the new *régime* in Mysore, I am unable to say precisely to what extent the order issued on the 12th September, practically dismissing all the able-bodied or "well-to-do" labourers, was modified by experience, but apparently the error was soon recognised. By the Famine Code issued by Mr. Elliott on the 2nd October 1877, we find it laid down in the opening paragraph that, "in the present "state of this province (Mysore), it is not intended, "until a crop has been harvested, that any applicant "should be rejected on the ground of his being well-"to-do, provided he submits to the three tests,"—viz., those for (1) distance, (2) wage, (3) task. The closing of Budget works as directed, all over the province, must have had a serious effect on the able-bodied bread-winners, and it is therefore difficult without further information to know how this modification of the original order practically afforded relief, or rather diminished the hardships of this class. Judging from the increased numbers shown by the returns to have been employed, subsequent to the 8th September, on works under the civil officers, it may be presumed that, all these being of a petty character and close to the homes of the people, the so-called distance* test was found unsuitable, and partially, if not wholly given up.

Practical abandonment of the several tests.—The wage and task tests, as elsewhere shown by the order of the Famine Commissioner, on the Timmenhuli tank, and subsequent departmental instructions to the superintending engineers, were also abandoned as impracticable; but these, like other matters, will be best established by local inquiry.

Major Scott Moncrieff.—At no time would I reject applicants for labour because from their appearance they are not in want. It is of great importance not to let people run down from the full strength from which can be demanded a full task to the reduced strength from which little or no task can be demanded. With able-bodied labour on good works the State invests largely, and gets a return for its money. Surely this is better economy than spending if it be even only half the amount on relief yielding little or no return. Appearances are not safe guides, and a man or woman may look in tolerably easy circumstances and yet be very poor. Who is to decide?

Mr. Ricketts. — Appearance alone is deceptive. Decent clothing is often a sign of good economy, and the wearer may in reality be no better off than a person in rags, and I would preserve the self-respect indicated by clothing as compared with rags *alias* semi-nudity. The question of ornaments is more difficult. If applicants are rejected on this ground, they will remove their ornaments, and they may then get lost or stolen, which is a loss of material wealth. Besides, such ornaments may, in fact, represent the sole capital of the wearer as carried on the person, and may be turned to account hereafter on return home, illness, or during the trying interval of sowing and harvesting of the crop. I, therefore, consider these tests of non-penury as rather delusive and extremely easy of evasion.

Colonel Johnson.—The distance test is only admissible in the case of malingerers and skulkers, people who are able to and will not work. If it be decided that these people can neither be made to work nor allowed to starve themselves, matters should at all events be made as uncomfortable for them as possible. For people willing to work, the nearer the work can be brought to their homes the better, always provided that suitable work can be found in the locality. Failing this, as stated above, they may fairly be expected to go to a distance. The idea of rejecting an advantageous work because it is too close to the locality to be relieved, or of purposely making the labourers march several miles to and from the work every day, should not be seriously entertained for a moment.

CH III. QN. 5

QUESTION 5.—THE DISTANCE TEST.

The Distance Test.—State how this test has been applied within your experience of famine, and how you think it should be applied. What amount of distance has been considered sufficient for the test? Was it enough that the labourers should have to go some distance to and from the work? Or was it insisted on that they should live away from their homes? If A is a work near village Z, and B is another work 10 miles off, have the inhabitants of Z been refused admittance at A and directed to go to B? If so, what measures were taken to ensure that they did go to B? If the test has been relaxed, state under what circumstances. Has the test been effectual, and has it kept away persons who were not in distress? Has it been too severe and kept away people who were in distress? What modifications would you, from the experience now gained, propose in applying the test?

Punjab.—Distance test regarded as most crucial, but there has been no experience of it in the Punjab.

North-Western Provinces. — Opinions divided. Many officers view the distance test with disfavour and think it sufficient to take care that large works are placed far from centres of population.

Bengal.—The distance test was very little used in the Behar famine. The opinions of the civil officers are much opposed to it. Some of the engineer officers who were sent on relief works in Madras are in favour of it.

Bombay.—11 answers. Opinions differ. One or two officers are opposed to the test; others approve of it as effectual in keeping off persons not in distress, and do not think it cruel if worked as directed by the Bombay Government "in a reasonable and discriminating manner." It was applied to send the people from 10 miles to longer distances from home. It is considered sufficient to send them so far that they cannot return at night.

Madras.—To this question 37 European and 4 Native gentlemen have replied.

Opinions are divided. A majority find advantage in the distance test (if not too severe) in keeping people not in real need off the works, especially near large centres like Bellary. It is suitable also for professional labourers, who should be housed on the works. Those opposed to it state the disadvantages to be that it keeps away people really needing relief, and hinders the cultivators from returning to their fields when rain falls, breaks up families, and encourages wandering.

PUNJAB.

Mr. Nicholl.—Of the three tests, this is the most crucial; people who are not in real distress will not travel long distances from their homes in search of work, on which they only hope to receive a bare subsistence. I have known whole families to travel 150 miles to works that I have had charge of, because no work was to be had nearer to their homes.

It is not enough that the labourers have to go some distance to and from the work.

The application of this test in the sense implied in the question has never been attempted by me.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Major Jeffreys.—The distance test as exemplified in the only work with which I am acquainted has proved singularly fruitless in results, the parties in every case deserting after having been brought by the tahsíl peons. The distances travelled were 40 to 50 miles. In those cases when the distance did not exceed 15 miles they stayed. My opinion is that this distance is quite sufficient for the test, and should not, if possible, be exceeded. They lived on the works, and did not return to their homes, except at long intervals, and for a day or two only at a time.

The place I refer to where "the distance test proved fruitless" was "Shikohabad," in Mainpuri district. Between the 16th and 24th May 1878, 2,271 paupers in daily parties numbering from 300 to 800 were sent by the Collector of Agra, a distance of nearly 40 miles, under the guard of tahsíl peons and chaukidars. They took four days or so over the route, the last march taking them into Shikohabad city. On the following morning they were taken out a distance of only two miles to the work, which consisted in excavating a canal. The subdivisional officer in charge, who was officiating for the Executive Engineer while absent on sick leave, gave them only a half task consisting of 27·5 cubic feet. To this they loudly objected, saying that they would work by daily labour, but that they would not consent to have their tasks measured. In the evening they bolted, and did not wait till the second day. This occurred five or six days successively with each set of paupers that arrived. At that time, as Superintending Engineer of the circle, I was absent on leave. After my return to duty I investigated the case as well as I could, but as the importation of fresh parties from Agra had been suspended, it was not easy to arrive at any definite conclusion.

The subdivisional officer in charge declares that, instead of the distance test having failed, it would be more correct to say that it had perfectly succeeded in its alleged object of proving the fitness or otherwise of the applicants for relief by their willingness or unwillingness to travel a certain distance to obtain it. There is no doubt that no willingness of any kind was displayed by these men to leave Agra. They were forcibly sent by the Collector under the escort of tahsíl peons, and when they found on arriving that their work would be measured, they rushed back to their own city (Agra), where they knew the Collector was bound to provide for them somehow.

This was the explanation given by the Officiating Executive Engineer in charge to account for his inability to detain these deserters, and I could find no reason for disproving his statements, which were additionally confirmed by the fact that a party of upwards of a hundred paupers from pargana Bárah (only one day's march) stayed and submitted to the conditions of task-work imposed. These men were really in an emaciated condition, and showed unequivocal signs of having suffered privation and want. The men sent from Agra, on the other hand, were said by the officiating divisional officer to have been in good physical condition, and to have showed no signs of starvation.

Mr. Muir, the Joint Magistrate of Mainpuri, was present at Shikohabad all this time, and gave the divisional canal officer the benefit of his assistance. He entirely confirmed all that the latter had said.

The only conclusion, then, which could be arrived at was that the distance test was in itself too severe, or that the recipients were not in sufficiently distressed circumstances to avail themselves of relief under the conditions required of them.

Later on in the season the experiment of importing paupers from Agra was resumed. As a preliminary measure, a change was made in the management of the work by recalling from sick leave the substantive Executive Engineer of the division, who was away when the previous desertions took place. The paupers were forcibly seized and stuffed into special trains under tahsíl guards. So unwilling were they to go that they tried to get out of the windows of the train while in motion, thereby causing the railway officials much anxiety and trouble. This fact having been duly communicated to the canal divisional officer, who was warned that these paupers must be detained by all legitimate means, the only thing left him to do was to treat the new arrivals with more than ordinary leniency. For the first three days only nominal work was exacted in the shape of completing the hutting arrangements. It was some time before anything like a task could be exacted from them. Ultimately they gave from 20 to 25 cubic feet per diem, earning about 1 anna 1 pie per head on an average. By this treatment they were induced to stay. I am bound to say that they contained a number of sick and weak among them, and that they all showed signs of having undergone privation and want, and in this respect I understand that they formed a contrast to those who came in May.

In the later experiments it will be seen that the paupers were retained, and that no desertions of any importance occurred. How much of this is due to change of management, and how much to the distressed condition of the relief recipients as compared with importations of May, can never be said with any certainty; but there is no doubt that, when paupers are forcibly seized and sent against their will long distances, they will not work readily or consent to remain unless they are treated with a leniency that is not contemplated in any famine code.

The works at Narora in August and September 1877 were not famine relief works strictly so called. While serving a secondary purpose of affording relief to the people who at that time were deprived of their ordinary avocations through drought, the primary object was to excavate a certain quantity of channel in the space of two months, so as to allow of a volume of water being admitted through the Lower Ganges Canal channel into the existing terminal branches of the old Ganges Canal, which the new canal is designed to feed.

In less than thirteen weeks 228 lakhs of cubic feet were taken out of the canal, inclusive of 40 lakhs clay puddle revetting (which last is a laborious process); and when it is borne in mind that this had to be raised 20 to 40 feet and carried 400 feet, it will easily be seen that such results could never be effected by ordinary famine relief agency, exacting from famished coolies the usual daily half task. It could only be done by getting double and treble work from the parties employed. The work was let out to petty contractors at 25 per cent. in excess of ordinary rates,

and on condition of doing a certain out-turn within a specified time. To induce their earth carriers to do extra work, the contractors employed the cowrie system, and the consequence was that the labourers worked harder than I have ever seen them do before or since. Under such circumstances of course an able-bodied man was able to earn 3 annas and 3½ annas per diem. It will readily be seen that so large an out-turn could never have been done within the time specified except by the inducements held out to them. The coolies were well paid, but they worked hard for it.

There was no doubt as to the popularity of the work. People swarmed from all the neighbouring villages until the numbers swelled to 20,000 or so in a distance of 25 miles. (Grain at that time was selling at 9 seers the rupee.)

Why, then, it may be asked, did the 1,450 men sent by the Collector of Budaun return to their homes dissatisfied with the system in force? Clearly it cannot be wholly due to the system, or else why should the 20,000 men from the neighbouring villages have come so eagerly and worked so well. The strangers were treated on the same terms as the residents by the contractors, whose only desire was to get the largest possible out-turn. It can only be accounted for by the supposition that they found the distance test too irksome, especially as they were sent more or less forcibly by the Collector of Budaun under an escort of tahsil peons, &c. I dare say if the residents of our villages had been forcibly sent to Budaun they would have left on the first opportunity, whatever the nature of the work may have been.

It may have been that these men were not suffering to any marked extent from want. They may have been willing to receive relief near their homes, although they would not go a distance to procure it. There are occasions of men coming with their families from long distances to find work. They do not arrive in large bodies, but singly. I have never heard of such men deserting; in fact they always make the best famine labourers. Between such men and the large bodies compulsorily sent by magistrates under guards, like so many animals, there can be nothing in common.

Mr. Colvin.—No distance test has been applied. I do not believe the distance test is workable here with large numbers. As soon as the labourers learn the trick of it, no one will allow that he lives within the prescribed distance.

Mr. Tracy.—The distance test has been applied only partially in this district. The relief works were too much scattered. People are generally willing to walk a distance of four to five miles to the works. The labourers have been allowed to live at their homes, or to remain at the works, as they pleased.

In the case put in the question, the inhabitants of Z have not been refused admittance at A. If they had been refused admittance, they would have gone away and returned to A, representing that they came from a distance. It is practically impossible to check their statements. The test is a very unsatisfactory one, and all but impossible to apply in practice. The general principle appears to be that large works should not, if possible, be opened near large centres of population.

Mr. Leeds.—The "distance test" is, I consider, a very important one, but I have never seen it effectually carried out, and where the distress is widespread and relief works numerous, do not well understand how it could be. Of course if the distress were confined to a small area, it would be easy to apply the test by providing relief works at a certain distance from that area, but where a number of adjoining districts are equally suffering, and relief works are being carried on in each of them, I do not see how it can be certainly ascertained whether the labourers on any particular work come from the immediate neighbourhood or not, that is to say, if the rule of exclusion or transfer has ever been put in force, and the labourers have a sufficient reason for concealing their place of residence. Anything like inquiry, where the numbers are so great and the need urgent, is clearly out of the question.

The only workable distance test, in my opinion, is that which operates naturally, and consists in removing relief works as far as conveniently possible from the great centres of population.

Mr. Lawrence.—In Agra it was found that the wives and children of labourers in ordinary employment in the city flocked to the works, although not by any means in actual want. To obviate this a relief camp was formed on the other side of the river, and labourers were paid in a currency (zinc tickets) which could only be cashed in the camp, where the labourers were compelled to live. This plan eliminated all those who were not in actual distress. When the relief work at Agra was reduced, labourers were despatched under charge of their overseers and mates, aided by one or two constables, either by road in two stages to railway works at Parkheru, 30 miles off, or by rail to the canal works at Shikohabad. The test has on the whole been effectual, though it may have operated severely in some instances. The remaining work at Agra was done as much as possible by people from a distance, the Agra poor being sent away.

Mr. Wall.—I found the distance test an excellent means of distinguishing the really indigent from the mock indigent. The latter, especially women, used to crowd the Túra embankment works (which were about 20 miles east of Bánda) when cash wages were in vogue. The substitution of cooked mahua lessened the crowd, and once a week or so the strongest looking of the relief labourers were told off for transfer to the works at Bánda city (Keyn-crossing embankment), and the result was that generally from one-half to three-fourths of the draft disappeared during the night and never returned. It is not I think sufficient that the labourers should have to go some distance to work; they should be obliged to leave their homes *for good and all*, day and night, or the test will not work in its full efficiency. I have only applied the test to able-bodied men. At first villagers of Z were allowed to work at A. Then gradually the best of them (physically) were told they would have to go next morning in a gang under a chaprassi to A. Most of them used to disappear during the night, and the remainder were sent off with a chaprassi to A. I found the test most effectual; I never had occasion to relax it. I would only apply it to men in good physical condition, to whom the march would be a matter of no difficulty.

Mr. Quinn.—I think that, ordinarily, the wage test and the labour test are sufficient, and that the distance test should only be employed at the very beginning or very end of a famine, especially the latter. I should not even then apply it rigorously so as to exclude those who lived in the neighbourhood, but I should close the relief work near where most of the labourers lived, and open or retain another at some distance. This was done at Hardoi at the close of the famine.

Lieut.-Col. Chamier.—The distance test has only once been tried in this district. In the early part of August orders were received to transfer 3,000 labourers from the Sutrik relief work to Buddu Sarai, a distance of 24 miles, but only 1,010 arrived. Some returned to Sutrik, and were taken on again as they were manifestly in want. From this little trial I gather that the distance test should be applied when work in another district is available; and secondly, that the work from which the men are drafted should be closed. But another consideration forces itself on me. It is undeniable that labourers prefer working under Shadi Lal at Sutrik to working under Mr. Rose elsewhere. I am not prepared to state what the true reasons are; but, naturally, one would be that labourers will flock to those works where the supervision is lax.

Mr. Blennerhassett.—In the relief works opened after the rabi harvest was disposed of, the distance test has been more or less applied, the works being sometimes 25 miles away from part of the distressed portion of the district, sometimes 10 or 12 miles off, and occasionally close to one distressed part though far from another. The works were not sufficiently numerous to carry out the test to its full extent by refusing admission at one work and granting it at another.

The labourers in general live on the works, their homes being too far to visit. A moderate distance appears to act favourably in deterring undeserving people from coming to the works. There is, however, undoubtedly, danger in making the distance too far; rumours start over the country that paupers are being gradually sent to distant stations and districts, and, hearing this, they prefer to die at home. A moderate distance in general between 10 or 20 miles, appears to be desirable; if too far, the test undoubtedly becomes too severe: much care is necessary on this point.

BENGAL.

Col. Burn.—In the works we undertook, and all of which are on official record, we did not establish any distance test. We had large works and small works, and each man went to the one he could make most at. We did not try to keep away people from work who were not in visible distress. We gladly welcomed fat Brahmins, though very few appeared, thinking they set a good example to their caste by getting them to work instead of begging from their poorer and lower caste neighbours.

Mr. Magrath.—This has never been employed where I have been, and must be perfectly illusory, because by the time that the people are sufficiently well known to make the application of the test practicable their circumstances would also be known, and they would be refused work if not proper objects of charity.

Captain May.—Works were so numerous in this district, and were given so near to all who needed it, that the distance test was not applied, except when Sir Richard Temple requested me to urge as many people as I could to go to Arrah to the canal works. They were offered liberal inducements; but, owing to their entertaining some suspicion of being sent beyond sea, I was only able to persuade 30 to go, although I assured them that not a single man would be sent beyond Shahabad district, and that I would forfeit my life if a single man were. I have no doubt that, if all work for the able-bodied had been stopped here, a large number would have found their way to Arrah. In order to apply the test, or gauge the extent of distress, I would start a few works some 20 miles apart from each other on the task and piecework system, and see from the registers kept in each work how many of the cultivating classes other than Nunias and other diggers resorted to them. Nunias go a long distance in ordinary times to obtain employment on canal or other heavy earthworks.

Mr. Hodgkinson.—To the distance test I am strongly averse. I can conceive no circumstances likely to occur under which such a test becomes absolutely necessary, and without absolute necessity the loss of labour it involves is not justifiable. Withdrawal of people to a distance from their homes may be unavoidable; but an unavoidable defect should not become a test. The wage-test and the labour-test are, I believe, quite sufficient if properly applied. I would turn no one away from a relief work. Appearances are very fallacious; and if proper tests are rigidly applied, few will come to work for a mere subsistence if not driven to it by circumstances.

Mr. Finucane.—The distance test was not applied in my experience of famines.

Moonshee Ishree Pershad.—Road works of large scale were opened in Madhubani subdivision under officers of Public Works Department. As long as these works were within three or four miles from certain villages, the inhabitants with their families worked in them willingly; on the works being removed to greater distance, only the strong members of the families followed the road works, and their families, consisting of old persons and children, left them and assembled at the nearest tank work. Ten miles distance was considered sufficient for the test; it was not insisted on that labourers should live away from their homes, nor were they refused at the nearest works in order to go to distant work; the test was relaxed when the relief work at Mirzapore in the Madhubani subdivision was overcrowded by applicants. Mr. Metcalfe and some engineers had occasion to go to the place and make some arrangements. The test had proved effectual and had kept away persons who were not distressed; it had not proved very severe, because those who could not follow the road works and were really in need of relief were admitted in tank works under civil officers who could easily ascertain their conditions.

In applying the test of distance it is necessary to employ *mates* and burkundazes of the neighbourhood of the place where the work is going on; they could form groups of labourers well with regard to the distance of their homes from the works.

Mr. Metcalfe.—In the Behar famine no distance test was applied, but the labourers were confined as much as possible within their own circles. So far from encouraging them to go to a distance, every endeavour was made to employ distressed persons locally in the vicinity of their own villages, for the reason that circle officers were better able to decide on the condition of villagers, when the inquiry was made in the vicinity of their own homes, whether relief works should or should not be opened; and as soon as the first favourable signs showed themselves these works were discontinued. If a distance test is enforced, labourers will, by making inaccurate statements, and giving a wrong description of themselves, obtain employment, from which under the rules they would be barred. When labourers were drafted from one work to another their names were struck off the *haziri* rolls, and information was sent to the officer of the circle to which these men belonged that the workmen had been struck off or ordered back to their homes. My experience is that daily wages, if fair wages, demoralize labourers in times of famine; or, if the wages be a pauper dole, it is cruelty, for the man cannot buy sufficient food for himself and his family on a bare pittance in famine time. The less food he can buy, the less physical strength he has to labour, and the less work he can do. I am wholly opposed to any distance test being applied in cases of a severe famine.

Mr. Kirkwood.—I am glad to say that I have no practical knowledge of the distance-test; but this much I can say from my practical experience of famine administration—such a test must leave unrelieved many deserving of relief, and must mean serious mortality, unless there be a perfect system of village inspection and a lavish expenditure on gratuitous house-to-house relief for persons who would willingly work if only the necessary facilities were afforded them. I cannot imagine a condition of things where adherence to such a test would not, in a great measure, render futile the utmost exertions to save life among the many who would certainly refuse to submit to it; and would not, at the same time, unnecessarily cause

among those who consent to submit to it a disintegration of homes, an amount of vagrancy, an increase in crime, and a heavy mortality from exposure and the trying incidents of such an unaccustomed life.

Mr. Kisch.—In the Behar famine I had charge of a famine circle at the north of the Mudhubani subdivision of the Tirhoot district (now Durbhunga). I joined my famine circle in March, and there were then no relief works in the circle, and the people were suffering severely. There were relief works outside my circle—twenty-five miles at least from most of the villages. Most of the people did not know of the existence of the works, and those who did know of them did not go to them. Grain was selling at about 10 seers for the rupee, and from the condition of the people I am satisfied that, had relief measures not been organized for the circle, many persons would have died instead of going to the works 25 or 30 miles distant. At that time, however, relief operations were only commencing, and I have no doubt that, had the villages been frequently visited, and had the people known where to find work, they would have gone to the works that were then open. As soon as the district was divided into famine circles, numerous small works were opened, so that almost every village in my circle was within two or three miles of a work. From March till the close of famine operations in my circle I had no experience of the application of the distance test.

I would commence operations in the distressed districts by having one large work for as nearly as possible every thousand square miles. As the distress and the demand for work increased, I would open more works and arrange as nearly as practicable to have one work in each area of 500 square miles. A canal or railway work passing through several work areas would of course be regarded as providing a separate work for each area through which it passed, and no other work would ordinarily be necessary. There being at the beginning of the famine only one work for each tract of 1,000 square miles, and afterwards only one work for each 500 square miles, all applicants for labour who did not live in the neighbourhood of the work would be subjected to a distance test, more or less severe according to the distance of their homes from the work. I would not attempt to apply the test in any other way than that now proposed. If the works became overcrowded owing to the severity of the famine, it might be necessary to have one work in every 250 square miles, or if very large works were not available, one work for every 100 square miles.

Mr. Armstrong.—The experience of Madras goes to prove that people willingly came daily from six to eight miles distant, returning again to their homes, and when ordered to go to another part of the work five or six miles off, went without complaint. Huts were provided on the work, and they were given the option of staying or returning daily to their homes. As a rule, when the work was over six miles distant, they preferred living in the huts. Many people, also, came from great distances, and lived in the huts. I would not relax the distance test, but it would be always advisable for the officer in charge of the work, or some other, to go round the distant villages, and notify himself that work was to be had at such and such a place, and that huts were found, bunniahs' shops opened, &c.; as people in out-of-the-way villages are timid, and, suspecting hearsay, will have every confidence if a Public Works officer goes to their villages and assures them that they will be well looked after.

Mr. Hughes. — When I first took charge of the Durampury taluq, I found from 3,000 to 4,000 coolies (I am not sure now of the exact numbers) employed in collecting road-metal on roads close to their houses. They were for the most part stout, healthy-looking people, and they had gained admittance to the work through the laxity of the native subordinates. With the assistance of the relief officers we turned off the able-bodied, and gave them tickets of admission to some works about 15 or 20 miles off. Our numbers at once fell to about 700 or 800. On another occasion, in consultation with the relief officers, we tried to march a large gang of about 2,000 coolies employed near the town of Salem a distance of 10 miles. The coolies refused to go, and we closed the work. I have already said that I consider the distance test to be the keystone of efficient famine relief administration. There are few years in which plenty of coolies cannot be found willing to work close to their homes; if they have nothing to do in their fields, in real distress they will always go one or two days' march from their villages. I would fix the greatest distance at 25 miles and the least at 10 miles.

If the officer in charge of the work has the confidence of the people and proper arrangements are made for feeding and hutting, I think there would be no difficulty in marching coolies longer distances, of 30 to 40 miles. I would propose no modification in this test, except to emphasize it more strongly if possible.

Mr. Brookes.—The distance test is not easy or always satisfactory to work. When labourers are hutted on the works, they think nothing of being 50 miles or more from their villages. They could not be compelled to walk to and from the works any distance each day; neither would it be any advantage if they would, as they would only do the less work. The test utterly failed in Madras when labourers were brought hundreds of miles from Cuddapah, Bellary, and Kurnool to the East Coast canal at Nellore. They deserted by thousands immediately after, although they were proper subjects for relief and the remuneration they were receiving was ample.

Subordinates who receive applicants for employment have not the means of finding out where they come from, and relief coolies soon learn to invent the story that secures to them the lightest and most profitable employment. The test is useful in arranging that work shall not be too inviting. Persons who are not in much distress will not leave their homes when the work is at an inconvenient distance.

I have not known of the test having been found too severe, except in the case in Madras already referred to.

Mr. Abbott.—All large gatherings should be avoided, not only from fear of cholera and other diseases, but because the numbers become utterly unmanageable. Wells and tanks, as a rule, the Zemindars and ryots themselves keep in sufficient repair, roads are for all purposes efficiently looked after by the local Ferry Fund Committee, and works of much greater utility can be found in each village. No Zemindar or ryot pays the slightest attention to sanitation, and the earth for each mud house in a village is invariably dug out from close alongside, the excavation forming a receptacle for every description of filth and refuse. Wells are as often as not within a few feet distance, and are of course the drains for these hot beds of disease, the filling up of which would not only find employment for the distressed, but do much to check future pestilence. Drains round villages might be dug with advantage, being another work the native will never do for himself. Both these works can be easily tested, all earthwork being gaugeable by measurement; and if the officer has been furnished beforehand with a list of people necessary to relieve, he can easily calculate the amount of grain required for each village.

Where large gatherings are inevitable, the best work to turn the people to seems the bunding in of rice lands and cutting of irrigation *pines* to contiguous rivers or jheels, as although these are such very necessary preventives of failure of crops, it is a most difficult thing to get Zemindars and ryots to combine to execute them in seasons of plenty, and its chief advan-

tage would lie in Government being thoroughly justified in making both proprietor and cultivator repay a considerable portion of the outlay by instalments on future crops; the labourers too could be dismissed early every evening.

Baboo Hari Mohan Chandra.—I was a relief officer in this district in 1874. At the first stage of the famine I gave the applicants work close to their homes; but when the works close to their homes were finished, and the number of applicants increased with the increase of the distress, I opened works at 12 or 15 miles distance from their homes, where they went without reluctance and worked. No compulsory means were needed; they went of their own accord. In my opinion the distance test should not be applied at the beginning of the famine; when the number of applicants increases with the increase of the distress, the distance test should then be applied. The people of this district are so averse to leave their homes that I consider a distance of 15 miles a quite sufficient test of their need. My labourers used to stay six days in a week away from their homes, and on the seventh day they used to come home once, and again go back to their work. They had made huts by the roadsides to stay there and work. The members of each family had a hut of their own. The labourers were never compelled by me to go to a distance and to stay there, leaving their homes; but they were compelled by their own need to go to distant works and stay there and work. I strictly enforced the labour test, which I think was quite sufficient to keep away persons who were not in distress.

BOMBAY.

Mr. Hart.—The distance test was only effectual when living away from their houses was a necessary condition.

The distance test, when too rigidly insisted on, was at times too severe; one or two days' journey of distance was sufficient to reduce the gangs often 75 per cent.; the people went perhaps the first stage, received food, and then deserted, only to return to the original relief centre when forced by hunger, and therefore in a less physically fit and deteriorated condition.

Colonel Jenkin Jones.—Employment was refused to able-bodied people within about 10 miles from their houses. In the Poona, Sholapur, Ahmednagar, Nasik, and Satara Collectorates, as soon as the large irrigation works and the Dhond and Munmar State Railway were started, the able-bodied people employed on the roads, &c. were drafted to them. The distance test is a very admirable one, but care should be taken not to press too hard upon the weaker persons, in whose behalf minor works should be kept open in the vicinity of their villages.

About ten or twelve miles was thought sufficient.

It was compulsory that they should be employed sufficiently far from their homes to prevent their returning at night.

Inhabitants of Z were refused at A, with the exception of the weaker persons.

A register was kept of the persons ordered to B, in order to prevent their finding employment elsewhere.

I have no modifications to propose, except, as I have above stated, that discretion should be used in dealing with the weaker applicants for relief.

General Wilkins.—The distance test was applied generally all through the Southern Division during the late famine, and with the best results. The minimum test of distance is where the famine labourers are unable to live at home to proceed to work in the morning, returning home again at the close of the day. When works are a few miles away, the villagers will return home, and the labour test is in such cases very severe without producing any compensating result.

The distance test in the Southern Division varied from a minimum of six miles up to 20 miles. Ten miles was the usual minimum.

Without the distance test I fully believe the numbers on the works would have been more than doubled. The test, therefore, has a very favourable side, though as usual there is a reverse to the medal.

By the exaction of the distance test, many people requiring relief were forced to forego such relief. They had aged relatives at home they would not abandon; they had a few cattle or a cow they could not leave in their villages without some one to take care of them; and other similar causes drew them away from relief.

Then, when village inspection became necessary, many people were found in great extremity and want, who, but for the application of the test, would have retained their condition.

In the interests of the State, however, the application of a distance test must be enforced.

The inhabitants of Z have been refused admittance on the work A, and have been directed to go to the work B.

The distance test was relaxed in the Kaladgi district for a short time at the height of the famine, owing to some order received in the Civil department. The works were immediately, I may say, swamped with people, and the Public Works officers were nigh overwhelmed. The test was put on again, and the pressure ceased.

Mr. Propert.—The distance test was not applied in the case of Khandesh, as the relief works were fairly distributed about the province, and the numbers resorting to each were never sufficiently large to render special tests necessary. As stated in the last answer, I am of opinion that the distance test may become a cruel measure. In times of famine I consider that the mere fact of large numbers of persons resorting to large, strictly conducted relief works, on which the lowest possible rate of wages is given and a fair task exacted, proves that those persons actually require employment to prevent their suffering from hunger. Under these circumstances, as Government admits its responsibility for the lives of its subjects, I am of opinion that the distance test should be abolished, or its application considerably modified.

Mr. Norman.—In this district the distance test ordered by Government was twenty miles, except in certain special cases, such as the residents of villages near the Dhond and Manmad State Railway. As far as possible, it was insisted on that the labourers should live away from their houses. It was found very difficult to carry out this arrangement, and the system was not in proper working order until nearly the end of the famine. In the case referred to, the inhabitants of Z would have been ordered to go to the work at B, and if the journey was more than a day's march, they would have been provided with food *en route*. No measures were adopted to ensure that they would go to B, and the majority usually refused and returned to their own village, where they remained until distress again compelled them to apply for relief, when the same process was gone through again. This test of distance undoubtedly kept many persons off the works who were not in distress. I do not think it has been too severe; the only difficulty lies in providing a sufficient number of works. It is almost impossible to persuade people to move more than two or three

days' march to a relief work, though they often wander hundreds of miles of their own accord.

Mr. Spry.—The mamlatdars and other officers were entrusted with the duty of sending applicants to certain works named, and they had to see that these applicants were not sent by them to works close to their homes. Then again when there appeared reason for supposing that the people got on to work close to their villages, by passing themselves off as inhabitants of distant ones, the whole gang or gangs would be removed to other localities. The above are the only ways, as far as I know, by which the distance test can be applied or should be. About 10 miles was considered generally sufficient for the test, though at times, for special causes, such as the closing of some works and the opening of others, longer distances had to be given. Applicants could not be entertained on works unless they brought "chits" from specially appointed officers. The inhabitants of Z would get "chits" on work B which would admit them there, but not on work A. It rested with them whether they went to B; we could only prevent their going to A.

In cases where the applicants were in bad condition and required what was termed "special treatment," no test was exacted, but they were sent to the nearest Civil work where "special treatment" was given, and that might be close by. The condition of the applicants was sufficient evidence of their requiring relief.

The test certainly kept away people not in distress. As to its severity, people really in distress were generally willing enough to accept it, a certain class excepted, who, although in distress, would not go to any work unless at their very house doors. For such obstinacy there was no cure which would not lead to demoralization. It is sufficient to apply properly a mileage rule about distance test, and I think it is quite enough that people should be so far from their homes that they cannot return to them at night. Once away from their homes, they should go wherever it is most convenient to employ them. It must be remembered that these very people who often cry out about a distance test will not hesitate of their own accord to wander about the country at very long distances from their dwellings.

As to the distance test, I do not think supervision or inquiry into the condition of the people could enable us to dispense with this test. There were several people on the works who were not in extreme need—the fact of their being able to do work was not a proof of their being in absolute want. Many came by way of husbanding their resources, having nothing else to do at home. I should mention, however, that these people, who were not in extreme need, and who came on work by way of husbanding their resources, did so when the distance test became disorganized or relaxed. That test was sufficient to keep them away. At one time, about August 1877, I issued an order that every one was to be received on relief works wherever he applied, and the distance test applied to him afterwards by moving him with a gang; the result was that great numbers flocked on to the work—that being the time when it seemed that the monsoon had failed. The distance test was not applied in the spirit of my order directly these people came on, but afterwards; when it was enforced the rain had fallen, and though the people left the works, both causes acted in making them do so. There were a large number of people who would not have gone to any relief work unless it was at their doors, and, through refusing to submit to this, they grew weak and apathetic, and gradually fell into a famine condition. They did not realize that the refusal to go to work would cause death, and they lived in hope of something turning up. I think that artisans, as a class, would sooner submit to a degree of poverty dangerous to life than submit to the distance test. There are, on the other hand, many people, like Khatadars with cattle, &c., who, though not in absolute want, would come on to work close to their homes, but would not go far, and it would not be dangerous to keep them off. But it may be impolitic to keep even them off, because if a man is stripped to his skin before he comes on to work he can hardly get on afterwards.

Mr. Charles.—The distance test was applied, (1) by forcing all applicants for relief who were in a state to travel, to go from 10 to 20 miles from the point of application to a work; (2) by making occasional transfers of workmen from one work to another, so as to make sure of weeding out persons who had got on by giving false names and addresses. Except at the beginning of the famine, before the distance test was fully applied, no one was allowed work close to his own village, even though there was a work going on there.

People, for instance, applying for work at Hubli, were given passes to go on the Public Works Department work at Dastikop, 15 miles off, and I at Dastikop issued passes to applicants to go to the works near Sulkinkop, 20 miles off. No measures were taken to ensure that the persons given passes went, but as the passes did not entitle them to work anywhere else, it may be assumed that all who really required assistance, and were physically able to walk the distances, went where told.

Undoubtedly many people really in distress were deterred by this test, as the disinclination of some people to leave their homes and relatives is very strong, and indirectly deaths may have occurred from it, people delaying to accept the conditions of assistance till they were too far gone to recover when they did come. But I hardly see how this can be helped. No conditions could be devised sufficient to exclude fraud and pretence and yet mild enough to prevent suffering among the really deserving, and experience showed that very strict measures were needed, the applicants for relief having lost all sense of honour or self-respect, and looking upon every kind of stratagem as allowable to cheat the officials into taking them on works or into food kitchens on easy terms. The great difficulty in applying the test was the separation of families. If three or four or five persons of one family applied for work, it seldom happened that they were in a condition to go a long distance.

Mr. Moore.—I cannot give exact distances, but labourers during the late famine, to whom the distance test was applied, had to go from 10 to 50 or 60 miles. Ten miles is sufficient, as being far enough to test the applicant's real want of relief. In some cases and wherever possible the inhabitants of Z have been refused admittance at A, but in some cases at the height of the famine, when there were no large works, women, children, and old and feeble men were employed near their homes. The test has been effectual, and has kept away persons not in distress. I do not think it has been too severe.

Colonel Anderson.—One great difficulty in working the distance test occurred from the people mis-stating their villages. If large works are adopted few people would be within such a distance of their homes as would enable them to go to and fro daily. If possible people should not be employed within ten miles of their homes. It is not expedient to require people generally to go too great a distance from their homes, say 30 or 40 miles; they dislike it exceedingly, and will leave work and cause trouble in hunting them up when they have got into bad condition. This, of course, does not apply to selected gangs.

Mr. Robertson.—The distance test was laid down in Government Resolution No. $\frac{4\,C\,W}{8}$ of 3rd January 1877, it being ordered that when a work under Public Works supervision is within 25 miles from a work under Civil supervision, the district officer should refuse to employ people on the latter work. Of course this did not refer to the aged and those unfit to work on a Public Works Department work.

Again, Government Resolution No. 83 P, of 18th June 1877, ruled that when a large public work is under execution within a distance of 20 miles from a work around any relief-house, all persons capable of travelling should be sent to such work.

I consider the distance test as one of the greatest importance; without it the Government would have to support crowds of people who are very well able to support themselves. When the district officers are careful to act up to the orders issued, no hardship can arise. Of course it was never intended that the test should be applied in a blind and unreasoning manner. Government Resolution No. $\frac{225 \text{ E.}}{774}$ of 7th April 1877 is very explicit on this point. It was there observed—

"Although the distance test is a very valuable one, there undoubtedly may be numerous cases in which the strict (and possibly unreasoning) application of this test would inflict very great suffering, and the order which enjoins this arrangement provides for such a contingency by directing local officers to exercise discretion in applying the principle in practice."

"It is impossible to draft orders to meet every case, but Government have a right to expect—an expectation which is fully justified in the very great majority of cases—that officers will apply general principles, clearly enunciated for their guidance, in a reasonable and discriminating manner."

No, it was not enough that labourers should have to go some distance to and from the work. The distance was such as to make it next to impossible that a labourer could spend his night at home, be at muster in the morning, and work all the day through. The inhabitants of Z would have been refused admission tickets to the work at A, and would have been sent to the work at B or to one further off.

As a rule they would not be admitted on a work without a ticket. Still great care, and after-examination, by the district officer, of the people on a work, was necessary to prevent the wrong people getting on a work. The tickets were not individual tickets, but probably one mukadam would be sent with a number of people from Z to A. When near the work some of these would be induced by people at a village near to B to return to a district officer's camp for work, and then people from the village near to B would fill up their places in the gang going to B.

Still with due supervision by the district officer, by his continually visiting a work and mustering the people in rows, he was in most instances able, on making inquiries, to trace out such cases, and thus ensure the due enforcement of the distance test.

This distance test was found most difficult of enforcement in the Ahmednagar district along the line of railway; there the position of working parties was continually changing, and persons who had at first been working at a distance from their homes would find their work brought to the neighbourhood of their villages. If it was found that people who were working near their homes had originally entered the work at a distance, common fairness prevented their being discharged, because the work had progressed and approached their villages. In all such cases the muster rolls would prove whether a labourer had been on the work under the distance test.

The test has been effectual, and has kept away thousands who were not in such distress as to require State aid. If the test is not enforced, then every man in a village would turn out for employment, thinking he might as well live on State aid as spend his own funds. All such labourers were as a rule found to shirk their work, and many, on a fair task being enforced, would, even though the work was near home, leave rather than work.

I do not think the test has been too severe, or kept away people who were in distress. The Government Resolution No. $\frac{225 \text{ E.}}{774}$ of 7th April 1877 gave the district officers full powers and left them a wise discretion, which, if properly used (as I invariably found it to be), prevented the rules acting with undue hardship.

I do not consider any modifications in the Distance Test Rules, as published by the Bombay Government, in any way called for.

When the distance test was not applied we had the works crowded by masses of people from neighbouring villages who were not in want; the application of the test at once reduced the numbers, and I never heard of any single bad result from it. The distance should be sufficient to make the people live away from their homes, and to show that they are sufficiently in want to submit to some inconvenience in order to get relief. I noticed this particularly on the railway, that when the work on the line came near villages, the villagers would try to come on; and then the civil officers would say that they must go to a more distant part of the work. It was, however, quite impossible to enforce a very long distance test. I was directed to try to get Sholapur people to the Nira canal—some 50 to 80 miles. I collected on two occasions two gangs of about 500 men, already on works, but only a few arrived, and these deserted shortly afterwards (see page 213). These were people in absolute and great distress; no one knows what became of them, but probably they came back to other relief-works. What they disliked was being away from their own country; a great many were cultivators or usually employed by cultivators, and they wished to be near enough to home to take advantage of any favourable change in the season.

Mr. Bosanquet.—So far as I was personally concerned, the distance test was not applied in this district till the famine became very far advanced. It was sometimes, however, necessary for persons requiring labour to be sent 30 or 40 miles for it on account of there being no large work under the Public Works Department in progress within that distance. The Public Works officers can explain the manner in which the arrangement of sending labourers "to the end of the line" on canal and road work was carried out. In the month of May it was found that, owing to a difficulty in providing sufficient supervision, the labourers on the line of road between Belgaum and Panchgaon, on the way to Kaladgi, shirked their tasks. It was found also that labourers appeared to prefer this work, on which, from the cause just stated, tasks could be shirked, to the work on the Gokak Canal, on which it was more difficult for this to be done. It was therefore decided by the Public Works officers of the two departments, after consultation, that it would be advisable to endeavour to draft a large number of men from the road to the canal, the distance between the two works being 30 or 40 miles. As it was not supposed that the labourers would go willingly from one work to the other, it was proposed that they should be given the option of going or of being dismissed altogether. In this way it was intended to transfer five or ten thousand labourers in gangs of 500 or so each. Unfortunately I was at a distance when this determination was resolved on, and on its being made known to me, the cause which led to it was not stated. As, therefore, the only object of moving the labourers appeared to be that, supposing some would prove contumacious and would refuse to go where ordered, their numbers would become reduced, I had no option but, pending further explanation, to deprecate the measure proposed. It is a matter of regret to me that, owing to press of work, I did not make a report on the subject to Government, who, I presume, on all particulars being stated in the report from the Public Works Department, ordered the arrangement proposed to be carried out immediately, and took me somewhat severely to task for not having acquiesced in it in the first instance. Whether they would have come to a similar decision had the cause which led to the recommendation been kept from them as it was from me I will not take upon myself to answer. On the

occasion under notice, after a large number of those intended to be transferred had been dismissed for refusing to go where ordered, the project in regard to the remaining number was, I believe, abandoned.

In June or July, when rain had fallen, Government sent instructions that pressure should be put upon labourers to induce them to leave the works. Bearing in mind what had passed in May, as just explained, I determined to meet their wishes by endeavouring to concentrate the labourers on the canal work above alluded to. This work was favourably situated for the carrying out of such a measure, as the Gokak taluka adjoins all the talukas of the district except one, Bide, in which there was very little distress. The Commissioner, however, expressed an opinion that it would not be safe to carry out the measure in the most northern part of the district, and things there were therefore allowed to go on as they were. In some other places also labourers had to be engaged for roads which required repair. As the famine continued to press more severely in August and September, many people came into Belgaum in an emaciated condition, and the number of deaths at the relief-house at that place increased much. The experience of the famine has shown that persons who have long been in a starving condition are hopeless cases when attacked by diarrhœa or dysentery. I cannot state whether any cause of the mortality was owing to the application of the distance test in the manner explained; but had I the time over again I should, in the absence of distinct orders for enforcing it, prefer to avoid it.

Regarding the latter part of paragraph 5, I believe if it was found to interfere with discipline if the homes of the people were near enough the works to admit of their returning to them daily, the labourers should therefore be kept far enough away from them to prevent this, but on the other hand, if possible, they should not be kept too far away to be unable to visit them between Saturday night and Monday morning. The test when applied thus has probably not worked injuriously in keeping away persons who were really in distress.

Appajee Raojee.—I had as many as 12,000 or 13,000 people on the works in my taluka; there was no hutting on the Civil agency works; the distance test was enforced, and people were not allowed to come on within 10 or 12 miles of their homes. They often deceived us by saying that they came from a far village when they belonged to a near one; we required them to bring certificates from the Patels, and then those were forged. I disliked the distance test and wished to do without it. It would be possible without a distance test to select the labourers who are in real want; if they are in their own taluka they can easily be known.

The Rev. C. Harding.—I thought the distance test acted very unfavourably if the object is to save life. The people are loth to leave their homes, and it is very difficult to provide shelter for a large number of people, so that many suffered much from want of it. I refer especially to the Ashti tank and the civil relief works all over this district and in Kaladgi. Many had to live in the open, though much reduced, and deaths were very common. People who had experience of this kind of life were very averse to it, and when removed from one work to another they often went home and many died. One such work was on the Ekruk tank, near Sholapur. I visited the people; they lived about in the fields mostly; there were very few huts, if any. Their discomforts were very great. I often gave money to people who seemed in want of it. People were constantly dying, but I don't know if such deaths would appear in any return. In Kaladgi I saw many people who seemed to be starving and who would not go to works, though told they would get work 10 or 12 miles off. They were of all classes. Some gangs near Kaladgi were so weak that they could hardly walk. They had evidently been much reduced before they came to work, or else they would not have been received on Civil agency works. Public Works Department works were stopped at this time; rain was falling, and it was hoped they would go to their fields. I was told that by closing the works the numbers had been reduced from 118,000 to 16,000; grain was then (October 1877) 8 lbs. per rupee, and I knew there must be great suffering, so I went there to distribute charitable funds. I thought many of the people on the works ought to have been in hospital if there was to be any hope of saving their lives. There were hospitals and poor-houses, and most of the people who went there died. There was a famine camp formed here in September 1877, and all the very poorest were sent to it. I thought it was managed very well: the food was better and larger in quantity than they had been ever accustomed to get; the mortality was very great, especially in the rainy nights. In Sholapur about 70 or 80 dead bodies were picked up by the police every day in September before Sir R. Temple's visit.

Mr. Candy.—The distance test was useful, especially when worked generously and discreetly. It kept off those who had private means until those means were exhausted. It also prevented cheating: people would turn up at the muster morning and evening, spending the rest of the day in their villages. They could not do this if 10 miles from home and camped out. It told hardly on deserted children, deserted wives, and widows who were able-bodied, and therefore not recipients of village relief. Great pains were taken to supply people so sent on with means of subsistence by the road. It was very common for people to stray *en route* and take to wandering. This aimless wandering was the cause of mortality. I knew a case where Mr. Ozanne sent a gang of men, with great pains, to the railway at Dhond; they were put on to work on the Dhond side of the Bhima; they said no, they wanted to go to the other side, and after three days they all left and wandered back to their taluka, where he found them again. This was in March or April, and the Bhima was quite fordable.

Mr. Whiting.—I do not think the distance test really keeps away all people who are not necessitous, as I have known people go a long way with carts and bullocks to picnic on the works, bringing their household utensils and hutting materials with them; it thus tells harder on the poor than on the rich. But it is useful to have the power of removing people from one place to another.

Mr. Wingate.—I would not have a strict rule, but I think every officer should have the power of putting the test in force, and no officer who has the welfare of the people at heart would abuse it. Large works are self-acting tests in this respect, and, in dealing with large crowds of applicants either at works or head-quarter stations, or in their villages, it is absolutely necessary to have the power of saying "If you wish relief, you must go to such and such a place." I have seen large crowds, say from one-fourth to half the population perhaps of a village, working the ordinary task on civil works and being paid less wages for more work than they could have got by going to a Department of Public Works work a few miles distant. These people included the well-to-do, the strong, and the non-necessitous. Outside these works were a smaller or larger crowd of piteous objects. The orders were to get a certain return in work, and the native officials said they could not admit the weakly and secure that return. All admitted that the workers could get along without the work,—in fact, all other villages had to get along with no such help. But being there, the people said they were glad to earn the Civil agency wage. I am convinced that a wage even below minimum subsistence, with a task enforced, will not in severe

distress keep off the non-necessitous if the work is close to the village. I am equally convinced that if works are started early and not delayed too long, and if in charge of humane officers with a system that admits the weakest to earn a daily wage sufficient to support life, a distance test that necessitates living on the works will not to any serious extent keep off those in want. Of course, the very fact that economy as well as efficiency of relief is aimed at, tends to exclude, and among those excluded will be some necessitous; to correct this, the people in their villages must be closely watched.

MADRAS.

Mr. Price.—I have seen the distance test applied in moving from one part of a taluk to another, and one district to another. I drafted, under the orders of Government, a large number of coolies from the Cuddapah to the Nellore District for the Buckingham Canal, and I also passed on those who came from Bellary. I do not consider that it is advisable, except as a last resource, *i.e.*, when work cannot be found within the district, stocks are known to be almost exhausted, and supplies from without and carriage fail, to move people so far from their homes—first, because they go with the greatest reluctance, and desertion constantly occurs on the route and fills the country in the line of march with wanderers; second, because when rain falls a large number of laborers, who ought at once to become available in their own district for the commencement of agricultural operations, are not; third, that natives, especially in the interior, are so afraid of going to a country which they do not know that they will rather bring themselves to the verge of death by starvation than move; fourth, that it is a very expensive measure. I have found the distance test very efficacious in the taluks, as the immediate effect has been to clear off most, if not all, of those persons who did not require work; but I think that, at the same time, it occasionally caused the secession of people who required aid in the shape of work but who, being inhabitants of towns, would not go far from their homes. Ten miles was the minimum distance which we, in Cuddapah, took as sufficient for the test. During the famine people often wore themselves out by walking some seven or eight miles a day to work and back again in the evening, and this in the middle of the hot weather. It was right, if there was to be a distance test at all, that the distance assigned should be such as to put the walking backwards and forwards out of the question, and so make the people camp out near the work. A very common practice after the coolies became accustomed to the test was that they walked home to their villages, often as much as twenty miles away, on the Saturday evening and came back on the Monday morning. Some, however, never moved, preferring to remain where they were. There was no insisting upon the people living away from their homes. The system was "no work for any one within ten miles from his permanent residence." The rule in the case cited was that the people of Z were refused admission to A and directed to go to B. They were, if they refused, left to shift for themselves. If they consented to go to B, they were sent there, with nominal rolls, in charge of a head cooly. I never enforced the distance test, *as a rule*, until the Order of September 1877 came out; until then there was an option in the matter, and when I found the coolies loitering, coming from adjacent localities only, and that they comprised a number in good condition, I moved the whole party ten miles. I have even done it only five, with the immediate result of a falling off in numbers. To the best of my recollection the test was, after October 1877, relaxed but twice in the Cuddapah District: once in the case of the people of a portion of the Badvel Taluk, which had suffered very severely, and for whom employment had to be found whilst their crops were growing; they were allowed to come to works not less than five miles distant from their homes; and once in the case of some distressed people in the Kadiri Taluk, who, in consequence of the difficulty in just then getting any suitable work for them fulfilling the requirements of the test, were allowed to come to employment within the ten miles. I consider that the test was to a great degree effectual. It certainly cleared off many of those who did not really want help. The good which it produced far exceeded the harm caused, which was, in my opinion, limited. It would not, however, have been had it been worked all through the famine. Fortunately the worst was over before it was introduced by Government as a recognised rule.

Of the principle of a distance test I approve.

I would rigorously enforce it at the beginning and the end of a famine, but I would in no case, excepting that of the dire necessity occasioned by a breakdown in everything, move the people more than from one part of a taluk to another, and I would never move the people over twenty miles from their homes. This distance is quite sufficient to weed out all those who ought not to receive relief. I would relax matters as soon as it became apparent that distress was really severe, and continue the relaxation so long as this state of things existed. My reason for this view is that at this stage a large number of persons who are not, and never have been, accustomed to heavy manual labor, who are not inured to walking about, camping out, and so on, are driven to seek relief, and that, when they do so, their physical powers are considerably less than they would be in ordinary times. I would continue with the Pariah, Woddah, and laboring classes properly so called to insist upon their going to works 10 miles or more away; but as regards other classes I would give them work nearer home. There need never be much difficulty in drawing the line between laboring classes as a body and others, but to these others I would show indulgence only at the severe epoch of the famine.

Mr. A. McC. Webster.—When I joined the district the distress was on the decline, a crop having been obtained, but it was soon exhausted, and distress again increased though not to the extent of the previous year. At the time of my joining the district the distance test was not invariably enforced *as a test*. Coolies were employed on the works in progress, and it was only when more coolies were required on any particular work that people on one work were drafted to another. I cannot say, therefore, that the distance test was as a rule strictly enforced so as to require people to live away from their villages. In most cases the laborers had to go some way from their villages, sometimes as much as eight miles, but they generally returned to their homes to sleep. It was not insisted that they should live away from their homes. It was considered that the labor and wage tests were sufficient to ensure that no non-necessitous persons came to the works. Latterly the distance test has been more strictly enforced, the people in some instances being required to work thirty miles from their homes. Had the season continued bad, this test would have been too severe and would have led to a serious relapse of distress, and I should have felt it my duty to point out the hardship and recommend a relaxation in its severity; but before the test was strictly enforced there had been very favorable showers, cultivation commenced in the villages, and there was a demand for labor, and all who could do so left the works.

Now, if relief-works are not popular, the question is —Is a "distance" test necessary? There are the two other tests—the "wage" and the "labor" tests—both excellent in their way. Is a "distance" test re-

quired as well? My opinion is that a distance test without hustling the people will not add to the security against non-necessitous persons coming on the works, and, if the people are hustled, the remedy is worse than the disease. I consider the two other tests properly enforced to be amply sufficient to secure the object aimed at.

Even supposing that the "wage" and "labor" tests were not sufficient, I would still deprecate the institution of the distance test, for it is in my opinion a hard and unnatural test—if it can be called a test at all—and one that would, if strictly enforced, result in a great increase of destitution and in a large measure defeat the admitted object of Government to save life in a time of famine.

The general body of the people will not leave their homes except under the direst necessity, and even then many of them will rather die than do so.

There is a very large class of persons who in a year of distress would require relief. I mean the smaller ryot class. That this is a large class is shown from the rent-roll of the district. Out of a total of 216,208 puttahs held either singly or in part by 452,494 individuals, 151,563 puttahs are for lands paying less than 10 rupees. The total assessment of such puttahs is Rupees 6,99,740, or an average of about Rupees 4-8-0 per puttah. Of these puttahs 71,676 puttahs are subdivided among 207,679 individuals, who pay on an average Rupees 1-12-0 a-piece, so that the total number of petty landholders in this class only is 287,566, each paying on an average about Rupees 2½. This is exclusive of their families. But we must, I think, go to the next class. This class of puttah pays from 10 rupees to 30 rupees per annum, and contains 51,037 puttahs paying Rupees 7,89,158, or about 15 rupees per puttah. But of these puttahs 30,744 are "joint" puttahs held by 107,589 individuals paying 4,64,968 rupees, or about Rupees 4-8-0 a-piece, so that these also must be considered petty landholders, and the total of such persons will therefore be, exclusive of their families, 287,566 + 107,589 = 395,155, each paying about 3 rupees; as some of these men have more than one puttah, I will take the number at 300,000. Now these people in an ordinary season can just manage to scrape along and to support their families; but to do this they have occasionally to work as laborers in the fields of more wealthy ryots; they have no stores of grain; they pay the Government demand out of the produce of their lands, what little surplus they have going to supplement their wages; and in a season of distress they soon come on our hands. True, they may have surplus cattle, but these are soon sold, and, owing to pasture being scarce, realize next to nothing. Last year cattle were selling at Rupees 5 a-head, the usual price being Rupees 15 or 20. As these people live by agriculture, and it is to them that Government look for 50 per cent. of their land revenue, it is of great importance that they should be able to tide over an adverse season. I assume therefore that such people should be encouraged to retain their lands, a few ploughing-cattle, and seed-grain. If however these are sold off, the people are in the same position as the non-landholding class, and there is only the very general aversion to leave their homes to be considered. But, if they are trying to keep stock sufficient to take advantage of a favorable rain and cultivate, it is necessary that they should be near at hand, and should be in a position to look after their stock. When works are near their villages, some of the family can go to work; others can look after the house or stock. When rain falls the men will plough, the women will continue on the works. If they did not do so, they would not have any means of livelihood, for it is assumed that their stores of food-grain are exhausted, and the men who, where not absolutely required for cultivation, would also go to works; the wages earned would be shared among the whole family, and give each a certain, though not perhaps a sufficient, meal. These people have therefore a peculiar objection to go far from their villages, and a "distance" test would have the effect of keeping them away from work. Then their cattle and seed-grain would have to go, and after everything had gone, after their lands had been relinquished and their home broken up, would they perhaps go to the works, and even then their doing so until they were in a most emaciated condition would be doubtful. Many of these people, if they did not die, would find their way to the poor-houses, and would have to be kept on gratuitous relief without giving any return for their support. And after the famine they would be reduced to the position of agricultural laborers; labor would be a drug in the market, the land would be waste, and the Government revenue would suffer, and would not recover for a very long time. For all these considerations I am of opinion that the "distance" test should not be required, and that the people should, as far as possible, be employed within such a distance of their villages that they can return to their homes at night.

Mr. Grose.—I think the distance test should not be laid down at all. Each pauper should be allowed to get work wherever there is work.

Mr. Crole.—The distance test has, on the whole, been successful when properly worked, that is to say, when Nellore laborers, for instance, have been told off to works, like the Buckingham Canal, at a distance from their homes, but within the same district. It has failed in such cases as the examples cited in the question. No distance test is now exacted from professional agency coolies. This is a mistake.

Mr. Fawcett.—The Distance Test.—This test was applied within my experience—

(*a.*) In the case of coolies turned off the works in this division and told to go for work, if they wanted it, to the Buckingham Canal in Nellore. This was done for some time in the middle of the famine.

(*b.*) In the height and decline of the famine, by sending coolies distances of from ten to twenty miles for work at places in the same taluk.

(*c.*) In the beginning of the decline of the famine, that is in September last year, by stopping works in parts of the Cumbum Taluk and telling the coolies, if they wanted work, to go to Dorvala, in the north-west of the Markapur Taluk, from forty or fifty miles off.

Of the above, the first was not really done for the purpose of providing a distance test, though it acted as such. I shall refer to it further on in answering Question 35. In the very beginning of the famine no distance test was enforced. A little later on, and in the height of the famine, distances of from five to ten miles were enforced whenever possible, and afterwards coolies were made to go considerable distances, as in the case of the Cumbum Taluk coolies ordered to Dorvala mentioned already.

From what I have seen of the test I should say that it is a very good one, properly applied, but I would never enforce a distance of more than ten or twenty miles, or greater than would bring them into a country differing from their own in any material features. Coolies should always, where possible, be made to live away from their homes.

Mr. Jones.—As a rule I am opposed to the enforcement of the distance test. It seems to me a mistake to adopt any rule which would force on people in distress the necessity to travel a certain distance daily. The natural tendency of the people is to move about when in trouble, and this tendency becomes so depraved in course of time, and such a pregnant source of difficulty in combating and controlling the evils of famine to those engaged on the work, that I think any rule which fosters the tendency should be avoided.

Mr. Oldham.—The Distance Test.—With large relief-works in progress I have never seen the inhabitants of neighbouring small villages and hamlets successfully excluded from the works. But with regard to large villages and towns, the test was applied by

removing the bulk of the laborers to a certain distance from them, employing on the intervening work a few permanent and identified gangs into which new applicants could not slip.

At present the test is applied by having one central work only in a taluk. This has undoubtedly kept away many persons who were in distress.

Except as a temporary expedient for dealing with masses of people who have rushed to the relief-works in numbers out of proportion to the available supervision, and as a measure directed against particular centres of population, I do not favor the test, which must be unequal and yet difficult to enforce against some of the persons for whom it is wanted. If it had to be applied systematically, I would do so by keeping all large relief-works at a certain distance from towns and large villages, five miles at least, by having huts provided for all the laborers, and by transferring them to other works (with hut accommodation) in their gangs as they stood, after they had been admitted and organised.

Lieut.-Col. Prendergast.—Works cannot be fixed on, at a particular distance from a village: works considered suitable were sanctioned; and the people who lived nearest came to them. People were not forced to live away from their homes when there was work near at hand. A being a work near Z village, the people of Z were not directed to go to B work, unless there were too many to keep at A: The clearance of the fort ditch at Vellore, and deepening the Suriagunta, gave employment to many people of the town of Vellore for several months. The works were instituted for the sake of the people of the town: the town people were not forced to go to works outside, nor were people from villages sent to the works at Vellore.

The distance test has been a good deal relaxed in this way: that people who were living in a cluster of villages, near a work, came to that work, and when there was distress all over the district, it seemed unnecessary, and cruel, to shift people about, when it was certain that they would be put on a work at one place, if not at another. There was a tendency among the civil officers too, from a feeling of compassion, to bring works near to the people, rather than to bring the people away to works. In the height of famine this system is, I think, quite admissible, but when times are not so bad, it is faulty. Villagers that were not in distress applied for work near their homes: they were told they could not be employed there, but that there were works further off for them: they altogether declined to go. Here the distance test acted as a check on the villagers. Having obtained nominal rolls from the Civil Department, they managed to represent themselves as in need of employment, but when subjected to the distance test, they no longer cared to ask for work. The test has been very effectual, and I am sure it has kept away people who were not in distress to a very considerable extent. I do not think it has been too severe at all; for if people were really unfit for work away from their homes, there was Civil Agency work or village relief to keep them from starvation. In general, I would say the distance test should be applied according to the local circumstances: when there is no doubt from the peoples' appearance that they must work, I would not care where they found the work; but when there is doubt, then I would transfer the people to a distance.

Lieut.-Col. Hasted.—The distance test I do not think answers. These people are hard to drive, and though many will go to a distance with their families for means of subsistence, they will not be driven to any particular work.

Mr. Rundall.—The Distance Test.—This is most important and should be rigidly enforced; it is a test for the enforcement of which the civil, not the professional department must be responsible, and moreover it is one which has been very much ignored during the recent famine.

From what I gather, the inhabitants of Bellary and other large towns were employed in the immediate vicinity, and as there was no tasking and scarcely any professional supervision, the actual outturn of useful work has been next to nothing. The distance test would have prevented the works becoming a lounge for all the hangers-on of a large military station. During the latter part of the famine, the inhabitants of Z have been sent to B and refused admission at A. I think 10 or 12 miles should be the minimum distance, and laborers should not go some distance to and from the work, but should be hutted at the work. The only relaxation of the distance test I would allow is the employment of the weaker people on well and tank clearing near the village *after* the bulk of those requiring relief have been sent to some work at a distance, and from these drafts of able-bodied people should be sent periodically to the large work.

Major Mead.—The distance test is most valuable and should not be less than 10 miles. In this district, South Arcot, there has been no great famine, but great distress. There were two famine relief works started as it was found that there were a large number of coolies on each work being near it, they were transferred to the work farthest from their homes; but few of them stood this test, they went away to their ordinary vocations.

The famine relief rates are very high, especially when the payment to the children is considered, and it is too attractive to coolies who live near the work. I would have no modification of this test for famine relief works proper.

Mr. Cotton.—On the work I have been in charge of the coolies have come from distances of 20, 25, and 30 miles and in a desperate condition, sometimes too weak to work at all for a day or two with hardly a rag, in some cases not even a rag, they have lost their all; their villages will go to rack and ruin, and they have been driven to the last extremity. I consider that, where it is advisable to start a large work, those coming from a distance should be relegated before they have come to this sad stage. The test is quite sufficient at a distance of three or four miles, not more, so that they can get back to their villages at night. On the work I am in charge of now I have found this the case, those who belonged to villages near by left as the work proceeded. In the Bengal famine in my experience, in the Sarun and Chuprah Districts, the embankments on the Gunduck and new and useful roads were quite sufficient to employ the people, and they were able to return to their homes at night. You saw no deserted villages and houses in ruins, and few homeless people. It appears to me that the test was sufficient if they went to and from their houses to their work.

Mr. Russell.—Ten miles from their homes has been taken to be the least distance at which work can be given, and it has been insisted on that coolies should live in the camps provided for them, as it was considered impossible that they could both walk to and fro for this distance, and at the same time do the daily amount of work required of them.

The inhabitants of Z have invariably been refused admittance on the work at A, near to their own village, and have in all cases been directed to go for work to B, ten miles off. In order to ensure that they do go to B, they are sent off under charge of a maistry, but there is of course nothing to prevent them wandering off anywhere they choose.

The test has only been relaxed in a case where the next work was situated at a distance of 25 miles or more and in the case of Civil Agency coolies. The test has been most effectual, and has, I believe, kept away all people who were not really in need of relief. I do not think the test has been too severe, but owing to the facts mentioned above, viz., that people come on to works under a false impression of the conditions under which they can obtain work, and are

Ch. III. Qn. 5.

Madras.

disheartened when they learn them, I think that it has practically kept away some people who were in distress. I can propose no modification, except that, as mentioned above, viz., the conditions under which alone work can be given to them be clearly explained to all people when applying for relief to the civil officers.

Abdul Kareem Khan. — This test has in some cases been improperly applied and the laborers dragged to unnecessarily long distances. A distance of fifteen miles seems to be quite enough for all purposes. During the height of famine it was enough that the laborers had to go some distance to and from the work, but at its beginning it is to be insisted that they should live away from their homes. The penury that was indicated from their appearance and clothing and a regard to the sanitary measures necessitated the relaxation of the test, and hence the villagers being close to a work had also been employed on that work. The test on the whole has been to a great extent effectual, but at the same time it has been too severe when misapplied; it would therefore be advisable if a maximum distance of fifteen miles is fixed for this test, and that its enforcement be restricted at the beginning and in the decline of famine, and its relaxation authorised when the appearance of an applicant indicates extreme poverty and weakness.

Lieut. Henderson.—The distance test often fails, because, with a limited staff, it is impossible to trace or identify individual applicants for relief. All who come to large useful works should be taken on irrespective of the distances they may come.

Mr. Hayes.—The distance test (10 miles from their homes, if I remember rightly,) was attempted to be employed on my work, but the special Civil officer in charge of famine relief operations finding it practically unworkable dispensed with it when sending on coolies for employment. As a matter of fact three-fourths of the coolies on the relief work came from the surrounding villages, perhaps within a radius of six miles, and most of them returned to their homes at nightfall. They all had first gone to the tehsildars for enrolment in the lists sent me. I relaxed this rule in the case of wanderers, who were palpably in great distress, and sent them direct to the gangs, as any further delay in relieving them might have been attended with fatal consequences.

Mysore

MYSORE.

Major Monrieff.—From my experience of famine the distance test is generally a failure. I grant it so far that if a work were in progress through the heart of a village I would make the stronger of the villagers go out 2 or 3 miles to it, and not allow them to work close to their own doors. But I strongly protest against the mistake (or it may be the cruelty) of forcing people 20 or 30 miles from their homes while there is a work within 2 or 3 miles. The result will be that many will not go, and will ultimately either die or require to be relieved gratuitously. It has been proved in Mysore a fallacy to suppose a native cannot be in want who will not go 10 miles to work. What I have said is not at variance with my opinion that 100,000 people supported on a few large works will not only yield a better return to the State than the same number employed on 500 little works, but that they will also be better relieved. District officers should use every effort short of compulsion to induce paupers to go to these large works, especially such paupers as have children. Very many of these latter must have perishes lately solely because their parents would not go to large works at a distance from their village. The distance test may be judiciously applied however at the end of a famine, when there is no reason to fear that those who refuse it will perish from want, and when the cooly has got so used to Government works that he may be trusted to accept it, if he requires relief.

Mr. Ricketts.—The railway works have in some respects proved a distance test and a fair one to a certain degree. If, in the interests of Government, it is found necessary to concentrate work and supervision on a large and important undertaking, then it is nothing but right to require applicants to go to that work irrespective of the distance; but to insist upon applicants for relief living away from their homes, or in the case put in this paragraph, making them go to a distant work, whilst another work in progress was nearer to their homes, seems to me to savour of hardship and disregard of all those domestic and other ties which make life worth having.

As stated before, if distance is an absolute or even reasonable necessity to the existence of work at all, then the case is different, and the famine-stricken must adapt themselves to what in reality are the exigencies of the case; but I would not create what in fact may be termed an artificial distance, and which instead of limiting the calamity of famine will assuredly involve much additional destruction of life. Besides, when charity is given it is not meet to give it in the most trying and distasteful form, to say nothing of the proved fact that rather than take it in such manner, many elect to forego the charity altogether and perish in consequence. An applicant for relief who can work and won't work, is no object of sympathy; but the case is different with one who is willing to work, but who revolts from the distance test either from pure physical incapacity or from natural reluctance to break up, and perhaps for ever, all home ties, in favour of what to his ignorant mind must appear a most uncertain and hopeless future.

Ch. III Qn. 6.

Question 6.—The Wage Test.

The Wage Test.—Where relief is given in the form of money wages, the wage will be chiefly based on the quantity, kind, and price of food required to support life, with a margin for condiments and contingencies. What are the assumptions as to the quantities of food to be given to labourers of different ages, sexes, and capacities for labour, and the extra allowance for condiments, &c? Have you any data by which to test the accuracy or error of the assumption made as to the quantity of food required? State your experience as to the physical condition of labourers who have for some time subsisted on any given relief wage, giving the amount of that wage, and the quantity of food it supplies? What have you ascertained as to the actual kind and quantity of food purchased by labourers with their wage? How is the price ascertained of the standard kind of food on which the wage is based? How would you, with your present experience, formulate the conditions of the wage test.

Punjab.—Wages are stated at 12 chittachs of grain with dal, and in money $1\frac{1}{2}$ to 2 annas for men.

North-Western Provinces.—The allowance concurred in as sufficient for men is 10 chittachs of wheat flour, 2 of dal, and condiments. The money value of this should be the wage. It is said that savings were made from this wage.

Bengal.—Various rates of wage are mentioned, $2\frac{1}{2}$, 2, and $1\frac{1}{2}$, annas per man; also "piece-work at liberal rates," 4 annas per 100 cubic feet, Government grain being sold at 10 seers per rupee and afterwards lower.

Bombay.—14 answers. The general opinion is that the Bombay wage was sufficient, but with no margin for fines, mistakes, and cheating. It was sufficient, provided that special treatment was added for the sick, and with the allowance for young children. It would, however, be well to add the Sunday wage. One officer is entirely opposed to the sufficiency of the wage; but his personal experience and observation were small.

Madras.—Thirty-three European and 4 Native gentlemen have replied.

Opinions are diverse. The controversy is between the Bombay wage, tried in Madras from January to May 1877, and the higher Madras rate adopted in September. The former being paid for seven days and the latter for six, the increase given by the latter when 1 lb. of grain = 1 anna was for men on Public Works Department works $1\frac{5}{7}$ pies per day, and on civil agency works $2\frac{4}{7}$ pies per day. Some officers hold that the Bombay scale was insufficient, and that the effect of the Bombay civil agency rate was bad; one officer says "disastrous." Other officers think that the Bombay civil agency rate (1 lb. + $\frac{1}{2}$ anna) is enough on light work, or enough if the people get it in full. The Madras wage (1 lb. + $1\frac{1}{2}$ annas for six days) is called by various officers fair, ample, liberal. It is stated that the labourers improved, gained flesh on it, saved something. Some officers think the rate for women (1 lb. + 1 anna) too high. A surgeon considers the Bombay civil agency wage quite sufficient for those who do hardly any work, but that men should have 20 oz. and women 16, + $\frac{1}{2}$ anna if employed in digging earth. Another opinion is that $1\frac{1}{2}$ lb. + 6 pies is the lowest safe rate for men. It is recommended that the grain basis of wage should be 20 to 30 oz., according to the task, with a smaller sum (8 pies) for condiments.

PUNJAB.

Muhammad Hayat Khan.—From last year's experience I am of opinion that for a grown-up man 12 chittaks of grain is sufficient to support life, and for a grown-up woman 8 chittaks, while for children from 6 to 10 years of age 6 chittaks. In cases where relief was given in the form of money wages, 2 annas for a grown-up man, $1\frac{1}{2}$ anna for a woman, and 1 anna for children fit to work were allowed. This rate of money wages was sufficient with reference to the selling price of food grain which prevailed at the time of the distress, including cost of condiments. Little children were allowed from 6 to 9 pies a day. The scale of food mentioned above was for weak and infirm persons, who were unfit for work, and received gratuitous relief. The rate of money wages allowed to persons employed on relief works was barely sufficient for their support, and they could not save anything out of it. The selling price of food grains in last year, when distress prevailed in this district, was from 13 to 15 seers per rupee, viz., wheat 13 seers, gram 15 seers, barley and wheat mixed 14 seers. The wages were fixed with reference to the selling price of food grains.

Colonel Parsons.—(*a.*) For labourers the following are assumed to be sufficient quantities of food to be provided:—

For men - -	$\frac{3}{4}$ to 1 seer of flour.	exclusive of condiments.
„ women -	$\frac{1}{2}$ to $\frac{3}{4}$ „	
„ children -	$\frac{1}{4}$ to $\frac{1}{2}$ „	

(*b.*) The data in support of the above are, that wages have been paid at rates (having regard to the price of food) such as to enable the labourers thus to provide for themselves. (*c.*) Labourers have much improved in physical condition under above circumstances. (*d.*) Labourers have purchased gram, wheat flour, and mixed wheat and barley flour according to state of the markets; the quantity purchased is much as above, sometimes a little more or a little less. (*e.*) The price is ascertained by local inquiry, or by estimating same in villages as slightly cheaper than the well-known tahsíl rates. (*f.*) Wages to provide food as above appear expedient.

Mr. Nicholl.—The Wages Test.—The quantities of food to be given to labourers of different sexes are, in my opinion—

Men - 12 chittaks of the flour of wheat, barley, or Indian corn.
$1\frac{1}{2}$ chittak of dál.
$\frac{1}{4}$ ounce of salt.

Women - 8 chittaks of flour.
1 chittak of dál.
$\frac{1}{4}$ ounce of salt.

On this dietary able-bodied men and women can subsist for any length of time, and give a fair day's work. For labourers employed on light labour less would suffice, and for children half the scale for a *woman* is sufficient.

On the works on which I have been engaged the rates of wages were—

Able-bodied men, $1\frac{1}{2}$ annas per day.
„ women, 1 anna „
Children, from 6 to 9 pies „

On these wages the physical condition of the people remained unimpaired, and they were able to give a fair day's work. The quantity of food which these wages provided was that given above, but then a scarcity only prevailed, and food was not at famine prices.

Labourers purchase the cheapest food procurable, regardless of its quality.

The price of food on which the wage is based is regulated according to the prices current in the bazaar; these are fixed from time to time by the Chaudris according to the laws of supply and demand, as understood by them.

The wage should be the same required to purchase a certain quantity of food, sufficient for the support of labourers of all ages and sexes.

NORTH-WESTERN PROVINCES.

Mr. Colvin.—We have no wage test as apart from a labour test. Government has prescribed the answer to the first question. Our labourers did well and throve on their wage. The cheapest grain was usually purchased,—barley in this instance; but cooked food was not always eaten, *chabena* and other parched grain being used, and the money wage saved for a future day or for the wife at home.

The price ascertained is that of the cheapest available food grain. I would give no man one pice more

than he earned, at a rate so fixed as to give him the Government average, if he did the amount of work on which it was calculated. This would be regulated by his assumed capabilities; and all men would be grouped for capability purposes. I would have no so-called minimum wage, which is a *reductio ad absurdum* of the relief wage. I never allowed it here, and our works were crowded and most successful.

Mr. Sandys.—The relief wage given during the past two months has been as follows:—

Men - -	- 1 anna to 1½	annas.
Women -	- 1 anna to 1¼	do.
Children -	- ¼ anna to ¾	do.

The physical condition of the labourers, and specially of those who are weakly, rapidly improved.

The quantity of food that it supplied at the average prevailing prices of food ordinarily purchased on the works is for—

Men.—Wheat or barley flour, 10 chittacks + from 3 to 9 pies for condiments.

Women.—Wheat or barley flour, 8 chittacks + from 3 to 6 pies for condiments.

Children.—Wheat or barley flour, 4 chittacks + from 1 to 3 pies for condiments.

The actual kind and quantity of food ordinarily purchased by the labourers on the works is for—

Men.—Barley or mixed barley and gram flour from 10 to 12 chittacks, dál and salt, sometimes chillies, 3 pies.

Women.—Barley or mixed barley and gram flour about 8 chittacks, dál and salt, sometimes chillies, 3 pies.

Children.—Ditto about 4 chittacks, dál and salt ½ to ¾ of a pice.

Dealers have been allowed to bring their shops on to the works, and the selling price is regulated by the prices prevailing in the nearest tahsíl, with a fair allowance for carriage.

Mr. Tracy.—It is assumed that the following quantities of food are sufficient for the bare subsistence of relief labourers.

Man, 10 chittacks flour, 2 chittacks dál, ¼ chittack salt.

Woman, 8 chittacks flour, 1½ chittacks dál.

Children under 10 years, 4 chittacks flour, 1 chittack dál.

Children in arms, 2 chittacks flour, 1 chittack dál.

Eight chittacks atta and two chittacks dál per day is enough for an adult, and half of it for a child under 10 years of age. The weight is Government weight, 80 tolas to a seer. For dál, vegetables should be substituted two or three times a week. A doctor is the best judge of diet in special cases of innutrition; as a rule, rice and milk should be given. One pound of atta with condiments is found sufficient in jails and poorhouse. In jails prisoners almost invariably increase in weight, and in the two poorhouses in this district, last cold weather, this diet was found ample. The requisite condiments are 100 grains of salt and two chillies. A man in work with this diet, will, as a rule, increase in weight. The jail books of this district prove this even when the work is not light. From 1st November to 30th June last, out of 1,326 men, 665, or rather more than half, gained weight on this diet, and that too on hard work.

The price of the food on which the wage is based is ascertained from the reports of the market rates submitted from time to time to the Collector.

I can suggest no improvement to the provisions of section 7 of the North-Western Provinces' Famine Circular No. 51A of 1878. I consider, however, that the larger allowance granted to special gangs of people in a reduced condition is decidedly objectionable. In the first place it is unnecessary, as the allowance of food which will maintain ordinary labourers in health and strength is more than the weakly and debilitated can consume or digest. In the second place it tends to demoralize the people. Numbers are attracted to the works by the hope of being enrolled in an inefficient gang, and thereby getting high pay and light work. The ordinary labourers are discontented, and abandon their proper work in the hope of being taken into the inefficient gang.

(The remainder of the reply to Question 6 has been furnished by Dr. Sanders, Civil Surgeon.)

"8 chittacks of atta, Government weight, is sufficient to support an able-bodied man. Prisoners in jail almost always invariably increase in weight on it; 2 chittacks of dál, and in place of it vegetables, two or three times a week should be added, also 100 grains of salt and 2 chillies. The jail return here for the last six months shows the truth of this. In the Hassanpur poor-house, open for more than four months, last cold weather, the above diet was found sufficient; the paupers improved on it, both as regards health and condition. Labourers receiving money wages will, as a rule, in time of scarcity buy the cheapest food going. The price of the standard kind of food can be ascertained by bazaar reports furnished by the tahsíldar."

Mr. Leeds.—The wage paid on relief works should, in my opinion, be strictly a subsistence one, and at the utmost, for an adult male, should never exceed the money equivalent of ten chittacks of coarse flour, plus three pies for condiments, &c. With bejar at 16 seers this would give one anna per diem as the rate of wage for an adult male, nine pies for a female, and six pies for a child.

At the rates recently prescribed by the Government of India, and laid down in revised Circular No. 51A of 1878, a chamár family, consisting of a man, his wife, one big child, one small child, and a baby in arms, could positively earn more—in grain, be it remembered, and not merely in money—than they were in the habit of earning in ordinary times.

I have never seen the earning of an agricultural chamár family set down as higher than three rupees a month all the year round, for it is only exceptionally that the wife and children can obtain employment in the fields and elsewhere, and this being so, the calculation is as follows:—

A.—Earnings in an ordinary season of an agricultural chamár family constituted as above:—

	Rs.
In money per mensem - -	3
Equivalent in grain at 35 seers of bejar flour to the rupee -	105 seers.

B.—Earnings of the same family employed on a relief work:—

	a.	p.		Rs.	a.	p.
Husband -	1	6	per diem.			
Wife - -	1	0	"			
Big child -	1	0	"			
Small do. -	0	6	"			
Baby - -	0	3	"			
	4	3	or per month of 30 days	7	15	6

Equivalent in grain at 16 seers of bejar flour to the rupee - 127½ seers.

The above statement speaks for itself, and if it be further borne in mind that the work is much lighter than field labour, that it is paid for daily in cash, and that there is no separation of the members of a family, the popularity of relief works can easily be understood.

As a practical illustration I may add that very shortly after the promulgation of the new rates, *i.e.*, early in August, a relief work was opened in a part of the Muttra district, not by any means exceptionally distressed, and that within the first fortnight the number of labourers had risen to 20,000.

Dr. Hilson.—The quantity of food necessary for a labouring man is 10 chittacks of wheat flour and two chittacks of dál, with condiments, per diem.

This diet, however, is only suitable for those doing light work, such as weaving, spinning, weeding, &c., and it was found that the paupers in the Agra poorhouse have thrived upon it. But if the work be of a laborious nature, from two to four additional chittacks of wheat flour or ground grain should be given, and care should always be taken to substitute vegetables and oil for the dál three times a week, because dál is too heating and nitrogenous an article of diet to be taken every day.

The vegetables and oil not only prevent scurvy, but impart an agreeable variety to the diet, while the increased quantity of oleaginous elements contained in the food tends to preserve the general health. From 150 to 200 grains of salt should be given to each adult; and when the diet consists principally of rice, this quantity should be increased by about one-third, owing to the deficiency of salts contained in the rice itself.

A boy above 10 years of age should get not less than 8 chittacks of atta with two chittacks of dál when doing light work, and two additional chittacks of atta should be given if the work exacted be at all severe: 150 grains of salt will be sufficient.

Women may be classed with boys over ten years of age.

A boy between 3 and 10 years should have from 4 to 6 chittacks of atta, according to age, with one chittack of dál and 120 grains of salt. Two chittacks of milk with one of dallia should also be given. Vegetables and oil should take the place of the dál two or three times a week.

Dr. Jackson.—The only statistics I know of which bear on this point are those of the jail. Prisoners of three months and under are placed on a reduced scale—eight chittacks atta with two chittacks dál or four of vegetables. These are labouring prisoners, and the nature of the labour is very different from that of a poorhouse of destitutes. The last statistics of this jail show that, while 36 per cent., at their discharge, of these prisoners are of the same or increased weight, 64 per cent have lost weight.

Of prisoners over three months, whose scale of dietary consists of 10 chittacks atta, 2 chittacks dál, and 2 chittacks parched gram, the statistics show that while 58 per cent. are of the same or have gained weight, 42 per cent. have lost.

The statistics are confined to late observations in the Saháranpur jail, and I do not know how they agree with the results of other jails. But they are consistent with probability. They show that the lower scale, combined with the depressing effects of initial imprisonment, is not sufficient to maintain adults in robust health and flesh, and if continued for a long period of imprisonment might result in serious mischief. But the conditions of starving beings are not the same as those of convicted criminals, and it is quite compatible with reason to aver that a scale of dietary which may be permissible, and as an aid to deterrency from petty crimes is most effectual, in the case of very short-term prisoners, though strictly what may be called *short commons*, and absolutely less than the body craves, may at the same time be found to be ample for the sustenance of the inmates of a temporary poorhouse. While the prisoners do as a rule lose flesh, most certainly the paupers put on flesh and gain strength under the regimen.

Dr. R. D. Logg.—Since the 1st November 1877, and up to the 31st October 1878, a trial has been made of giving a reduced diet of 1 lb. raw flour with the usual condiments, and a chittack of oil to all prisoners sentenced to one month's imprisonment and under in the Hardoi jail, and, I believe, the other jails of the North-Western Provinces and Oudh; in my own jail I am in a position to state with favourable results; the reduced scale of diet being found not only sufficient to support life, but, as a rule, proved also sufficient to keep up the condition of the body, and this, notwithstanding their being put to hard, light, and medium labour, a number of prisoners even gaining in weight during their stay in jail. Among the 426 prisoners treated as above, six were admitted into jail in bad health, of whom one died, two improved and were discharged in good health, three only being discharged in bad health, 37 of them gained in weight, 218 lost slightly in weight, and 171 neither lost nor gained.

Dr. T. M. Sullivan.—A male labourer cannot work on less than 10 chittacks of atta and 2 of dál or its equivalent in other grain.

A woman - -	8 chs. atta and	2	chs. dál.
Children over 10 -	6 "	$1\frac{1}{2}$	"
Ditto under 10 -	5 "	1	"
Ditto do. 6 -	4 "	1	"

A working man on eight chittacks atta and two of dál in a jail with every sanitary condition favourable to health will lose weight, on an average about $1\frac{1}{2}$ oz. daily, for the first 36 days.

Of course there are some disturbing elements in a jail, such as mental suffering in consequence of the loss of liberty or separation from family, &c., but under any circumstances it would not be safe to keep a man on less than 12 chittacks for more than three months.

In jail 363 adults were admitted with an average weight of 43 seers $13\frac{113}{363}$ chittacks; they were kept on eight chittacks of wheat and two of dál. After an average of 36 days their average weight was 42 seers $1\frac{168}{363}$ chittacks, or nearly $1\frac{1}{2}$ oz. loss daily; this included women as well as men. A more detailed report might be got from each of the jails in the North-Western Provinces at the end of the present experiment.

Mr. Daniell.—Circumstances vary; there are conditions when a man may consume all his wages in food daily; but from the experience I have gathered from the relief works in Basti, I am certain that the majority save from any wage. This can be understood where the people had passed through one year of hard times and were at work on the relief work in the second year with the fear of failure of rain and of crop before their eyes. They had parted with all their available domestic stock of utensils, spare clothes, &c., and saved up for the day when they would return home.

Some saved to collect money to buy seed, others for clothes; very few I should think lived up to their wages. Under these circumstances able-bodied men could not improve in condition, while the thin and weak still remained thin and weak. An increase of wage would perhaps have induced some to eat a little more, but hardly perhaps equivalent to the increase in wage.

Mr. Stoker.—The following was the scale of food laid down for our instruction and guidance by Government in the Public Works Department:—

——	Adult.	Child above 10.	Child below 10.
	Oz.	Oz.	Oz.
Flour - - - -	16	12	8
Vegetables - - -	4	2	2

The wage was to be fixed at a rate sufficient, with regard to current prices, to procure this amount and no more. The rate first fixed in Gorakhpur pice—

Man.	Woman.	Child.	Infant.
6	4	3	2

This was subsequently reduced to—

5	4	3	2

and finally fixed at—

5	4	3	1

The assumed food scale was inapplicable to the part of the country where I was stationed, where the food of the people is rice and not flour. Rice with arhar

dál was the food generally consumed, although barley and even wheat were procurable at lower prices than rice. The price of rice varied during the currency of the final scale of wages from 9 to 10 seers per rupee —that is, the wages of an adult man sufficed to purchase from 9 to 10 chittacks of rice and dál (for dál was selling at the same price as rice), of a woman from $7\frac{1}{5}$ to 8, of a child from $5\frac{2}{5}$ to 6 chittacks, and of an infant from $1\frac{4}{5}$ to 2 chittacks.

I should be slow to assert that such self-denial was generally practised, but several cases came under my notice in which the recipients of these wages had actually saved part of them. One woman, I remember, came to complain that a piece of cloth which she had purchased from a Juláha was smaller than he had stated it to be when he sold it. When I asked where she got the money to buy the cloth, she said she had saved it out of her wages on the works, putting aside nearly every day one pice out of the four she received. This was corroborated. She did not present a reduced or emaciated appearance.

One form of fraud among the workmen was to join a gang low down the work early, and having obtained a ticket step away on some pretence, taking a circle round the country, and coming on the works higher up obtain a second ticket. The operation was repeated in the evening and two sets of pice realized. To detect this I used constantly to search labourers: anyone who had two tickets on his person stood self-convicted. In these very numerous searches I constantly found one or more pice in the men's possession, the savings of the wages of previous days.

On one occasion I searched the poor-house people who were in receipt of eight chittacks raw food and some salt daily, and found more than one of them with savings of grain (amounting in one case to over two seers) in their possession. I am inclined to think, however, that they supplemented Government relief by mendicancy.

However, these facts will show that the amount requisite for bare subsistence is less than is commonly assumed. I think the rates for children were the most favourable. A man with his wife and three or four children, and perhaps an infant, were in a better position than a single man or woman alone. I made inquiries into several such cases on the works. I regret very much that I have lost my notes of them, but I remember distinctly that a united family was able to afford what it considered a full meal of necessaries, and regularly reserve a small margin for luxuries, such as tobacco or gur.

Firewood was procurable for nothing roundabout, and the people lost no opportunity of collecting wild herbs and fruit, mangoes, mango-stones, mahua, &c. But it is of course impossible to form any estimate of the amount of these. It is not possible, I consider, that they appreciably affected the general diet scale.

It must not be forgotten that the works were only open and wages only paid six days out of the seven; the actual available diet is therefore only six-sevenths of the daily scale I have mentioned above.

Dr. Prentis.—Judging from many years' experience as a superintendent of a jail I should think the following scale of diet for people on relief works would be sufficient. viz. :—

For men, atta 10 chittacks, dál 2 chittacks, salt 150 grains, chillies one, oil 1 chittack for every 25 men, firewood 6 chittacks each. If procurable 4 chittacks of vegetables can be given three times a week in lieu of the dál. For women, atta 8 chittacks, dál 2 chittacks, with condiments, &c., the same as for men. For children above 10, adult female diet. For children below 10, 5 chittacks of atta, and 1 chittack of dál, with condiments in proportion.

Dr. Deane.—I have had no experience of the quantities of food to be given to different ages and sexes; my experience has been solely confined to adult men, in good condition, when employed on various works, and it is as follows. In the months of April, May, and June 1877 I employed 100 men daily in brick-making; five men were obliged to turn out 1,000 kucha bricks per diem. Their food consisted of daily—

12 chittacks wheaten flour.
2 „ dál.
100 grains salt.

Every second day they got in addition four chittacks of vegetable (ság) each, and four chittacks mustard oil; for every 100 men also a pod or head of red pepper.

After working for about a month, I found the whole gang looking haggard and worn, and scarcely a man had maintained his weight. I doubled the quantity of oil and gave vegetables every day instead of every second day, and then watched to see how they would get on. The change was most marked, the additional oil and vegetables being just about enough and keeping them in good condition. I give this as an example of what men require who are performing really hard labour, as I need hardly say the diet I gave was an exceedingly generous one. I am convinced, however, that had I kept them on less I could only have done so at the expense of the health of nearly every man in the gang, and that I would have had a heavy mortality in the autumn and winter. Against that, however, I will now give my experience of what men who are on comparatively speaking light labour require. I speak of the labour in the majority of our jails, as jail repairs, drawing water, digging in the garden, cleaning the jail, cooking, barbers, &c. For nearly a year I have been trying a diet for men of three months' sentence and under, consisting of 8 chittacks flour, 2 chittacks dál, and 100 grains of salt daily; four times a week they get 4 chittacks vegetables each, mixed with 4 chittacks of mustard oil to every 100 men, and a pod or head of red pepper. Since I have been able to procure it (about a month) I have given a diet as follows:—

Makka $7\frac{1}{2}$ chittacks -
Wheat flour $\frac{1}{2}$ chittack } daily.
Salt 100 grains -

Three times a week 2 chittacks dál and four times a week vegetables with oil and pepper as above.

The diet is given as follows:—

At 11 a.m. $3\frac{1}{2}$ chittacks makka and $\frac{1}{2}$ chittack wheat is given in chapattis with the dál or vegetables, as the case may be. At 5 p.m. 4 chittacks makka is given boiled in water. Since I commenced giving these reduced diets (now nearly a year ago) I have carefully recorded the results, the number of men given to, their weights coming into and going out of jail, and their work in it. Finally, my opinion as to the sufficiency or otherwise of the diet—538 men were so remarked upon, and in only three or four cases did I find the food insufficient. As a rule, they lost *slightly* in weight, but their health remained perfectly good. I am quite certain that the diet is ample for *moderate* work, but utterly insufficient for really hard labour. Talking of hard labour I may mention that I look on digging by task work, if the ordinary full amount is exacted, as *very* hard work and requiring a diet as generous as I gave my brick-makers.

Capt. Currie.—In February and March the rates of wages, based upon the cost of these rations at the then prevailing prices, were—to men $1\frac{1}{2}$ anna, women one anna, and children half anna. The apparent result was that people who came in lean and starved went away in good physical condition. Although the rates are fixed on the assumption that wheaten flour is used, the people seldom bought it, preferring flour made from coarse grains either from choice or on account of its cheapness. The price of food is ascertained from the bazaars directly or through the tahsildar.

Mr. Quinn.—I think it most important that labourers on relief works should not receive more (taking of course the price of grain into consideration) than they ordinarily earn, and that they should not

be induced to prefer employment on relief works to their ordinary work. It must be borne in mind that in relief works a whole family are taken on and earn wages, a state of things which ordinarily happens rarely, except at harvest time. The wage too is regularly paid. The amount and quality of food a man requires depends much on what he has been used to. It is unfair to the country, which has to bear the cost of famine expenditure, to do more than keep those relieved in the degree of material prosperity which they enjoy in ordinary years. If a Government does this it does much.

The rates paid in this district were:—

Beldar	4 pice, afterwards raised to 6 pice.
Coolies	4 pice, afterwards raised to 5 pice.
Women and big children	3 pice.
Children	2 and 1 pice.

The cheapest flour in the months during which relief works were carried on was—

January	Bájra flour, 12 seers the rupee. = 12 chittacks an anna.
February	Barley flour, old, 10 seers the rupee. = 10 chittacks an anna.
March	Barley flour, new, 16 seers the rupee. = 16 chittacks an anna.

On this wage the labourers rapidly improved in condition, and no complaints of its insufficiency were made.

The ordinary wages paid by the District Engineer are—

Beldars	2 annas.
Coolies	6 pice.
Women	4 to 6 pice.
Children	3 to 5 pice.

Lieut.-Col. Chamier.—As to wages, these have differed under different circulars. Where the orders have sactioned wages in excess of that sum which is sufficient to purchase the quantity of food considered necessary to sustain life in health, numbers of able-bodied men were attracted who had up to that time managed to live in fair condition. Ten chittacks of flour plus 9 pies were too liberal wages for the strong. On a lower wage the physical condition of the workmen was good. It has been recently reduced by three pies. The system that of all others has proved to be the most attractive, hurtful, and demoralizing is the granting of a minimum wage for doing nothing at all. Lazy coolies had often been seen before famine relief works were opened, but it was quite a novel spectacle to see coolies sitting down and absolutely doing nothing. They were content to take the minimum wage; it gave them five pice each. A man and his wife and their child could thus earn 11 pice a day for the trouble of asking for it. No wonder that the increased in labourers was both sudden and large. The food purchased at the works was flour, rather less than the amount allowed the labourers in their daily earnings.

Dr. Cameron.—The relief works in this district have been of a petty character, and as no regular relief camps have been opened, I have had no good opportunity of forming an opinion on the questions of wage and the quantity of food that ought to be given to labourers. From my experience in the management of the jail, however, I have formed the opinion that a labouring man's strength cannot be maintained for any length of time on a less allowance than 10 chittacks of wheat flour and 2 chittacks of dál, with a pice worth or so of salt and other condiments, and firewood, per diem. Short term prisoners on a daily allowance of 8 chittacks of flour and 2 of dál when on light labour, and of an additional 2 chittacks of flour when on hard labour, have either lost weight or hardly maintained it. For men on the hardest work, such as digging, the allowance of flour should be 12 chittacks. For women, I think 8 chittacks of wheat flour with the same quantity as above of dál and condiments sufficient to keep them in fair condition. I have formed this opinion from what I have observed of women who had been on relief works for some time, as well as from my knowledge of female prisoners. For a large child, 6 chittacks of flour and 1½ of dál would be sufficient, for small children 2 to 4 chittacks of wheat flour according to age, and 1 of dál with a small allowance of condiments, I consider a sufficient allowance. I think, however, that for children under two years of age a quarter of a seer of milk should, if possible, be substituted for the dál.

The price of the standard kind of food on which the money wage is based would naturally be that obtaining in the nearest bazaar plus sufficient to induce a baniya to bring supplies to the works, and the wage ought to be sufficient to purchase the quantities of wheat flour and dál above stated plus a pice for condiments and firewood.

Dr. Bonavia.—I have no experience of the wage test, but the following information may be of some service. There are two *non*-labouring male prisoners in the Fyzabad jail. Their allowance of food is as follows:—

8 chittacks atta daily
2 „ dál three times a week with ghi.
4 „ (raw) vegetable cooked with oil four times a week.
1 pod of chillies, 72 grains of salt } at the rate of per day.

Their weights on admission (3rd May 1878), and on date of re-weighing (30th July 1878), were as follows:—

	Mds.	s.	c.	
(1)—3rd May 1878	1	17	0	
30th July „	1	11	0	
	0	6	0	loss.
(1)—3rd May 1878	1	10	14	
30th July „	1	10	0	
	0	0	14	loss.

These two men are thin.

There are also four labouring male prisoners, who are *short* termed (under three months), and therefore they are on the same diet as the preceding. Their labour is light; they sit down all day and twist "múnj," string for matting. Their weights on admission and again on 30th July are as under—

	Mds.	s.	c.	
(1)—Admission 17th May	1	30	8	
30th July	1	14	8	
	0	16	0	loss.
(2)—Admission 17th May	1	17	0	
30th July	1	10	8	
	0	6	8	loss.
(1)—Admission 22nd May	1	16	12	
30th July	1	11	8	
	0	5	4	loss.
(1)—Admission 29th May	1	9	12	
30th July	1	8	0	
	0	0	12	loss.

These four men do not look so thin as the two preceding, although they do some light work.

All these six men have lost weight on that diet, although they are well clothed and well sheltered, and cared for in many ways.

Dr. Higginson.—In October 1877 the Inspector-General of Prisons, North-Western Provinces and Oudh, with the sanction of Government, directed the introduction for one year of a reduced diet scale applicable to prisoners of terms not exceeding three months and to all female prisoners sentenced to rigorous imprisonment.

The reduced diet scale is as follows:—

I.—To all prisoners sentenced to imprisonment for one month, whether simple or rigorous.	Atta, 8 chittacks. Dhall, 2 ditto. Ghi, 1 chittack to 25 men. Salt, 1 ditto to 9 men. Chilli, 1 ditto.

On alternate days four chittacks vegetables in place of dhall, and oil to an equivalent amount in place of ghi.

II.—To all prisoners sentenced to terms of three months, or less than three months, but more than one month.

(*a.*)—As long as they are kept on labour involving hard labour.	Atta, 10 chittacks.
(*b.*)—When placed on light labour.	Atta, 8 chittacks, with the same quantities of dhall, &c., and condiments, as in I.

III.—To all female prisoners, of whatever terms or kind of imprisonment, unless they have children at the breast, the same as in I.

This reduced diet scale was brought into force in the Gonda jail on the 1st November 1877. Of 119 prisoners of class I. admitted since then the average weight on admission was 50 seers 1 chittack; the average weight on discharge, 48 seers 8 chittacks. Only three were not in good health on discharge. Of 95 prisoners of class II., the average weight on admission was 49 seers 6 chittacks, and on discharge 47 seers 2 chittacks. All but one were in good health on discharge. Of class I., 94 had decreased in weight on discharge; of class II., 74. The task of work given employs the prisoner steadily for at least eight hours of the day.

It may be concluded from the above that men, though working, may be kept for, at all events, three months on short diet and still maintain a very fair bodily condition. The average weight on admission shows, however, that there could not have been any very great want before imprisonment.

Dr. Ellis.—The wage given to relief labourers on earthworks near Sitapur in January to March was—to men 1¼ anna, to women and boys 1½ anna, to children 1 anna. This was sufficient to purchase, at the rates then current in the Sitapur bazaar, the following daily:—

		Atta. Chittacks	Dál. Chittacks.	
For	Men	12½	2	Salt, pepper, and firewood for this ration.
	women	10	2	

The physical condition of the labourers on the above ration improved very much: those who joined weak and emaciated gained flesh rapidly. The price of the standard kind of food was ascertained from the returns of the Sitapur market, the rate being published twice a week.

Conditions of Wage Test.—The wage should, in my opinion, be as much money as would purchase—

		Atta. Chittacks.	Dál Chittacks.	
For	Men	10	2	Salt, pepper, and firewood to cook this ration.
	Women	8	2	

that is, presuming that the labourers worked in the way that labourers on earthworks generally do.

Dr. C. Planck.—This question forms a portion of a very comprehensive series upon the important point of the tests applicable, by way of proof that an applicant for employment on a relief work is really a distressed person who ought to be relieved by paid employment.

Thus, if a person will go far from home to seek relief, he will have fulfilled the *distance test*. If he will do a fair day's work for, I suppose, a fair day's pay, he has fulfilled the *labour test*. If he will accept a wage sufficient to provide only a little more than a bare subsistence in return, I suppose, for a little work, then he has fulfilled the *wages test*.

In regard to these tests, supposing the applicants for employment to be persons really suffering from insufficient nourishment, I do not think the *distance test* ought to have any existence at all, because its practical result is the loss of shelter to such persons and injury to family ties. In considering this question of famine relief it must never be lost sight of that women, girls, and old persons form a large proportion of the applicants for employment, and the possibility of retaining the shelter of the home at night-time to such persons is almost as important, as regards their welfare, as the receipt of a subsistence allowance of food.

I do not say that the *distance test* may not have to be fulfilled by many persons, because of the impossibility of providing relief works in many places. But I would on no account apply it as a test and refuse employment to the necessitous who may have their homes near to a work.

On the contrary I think the best results of a relief work would be achieved by the employment thereon of as many necessitous persons as possible of the immediate neighbourhood.

In regard to the *labour test*, I suppose that a fair day's labour for a wage which will provide food, clothing, and shelter, in the country concerned, is the proof of the necessity of the vast labouring population of the civilized world at all times. But such test can never be practically applied on a famine relief work, because many of the persons who ask for employment there are not used to regular labour at all; because with their varying strength a fair day's labour cannot be apportioned to each; and because of the impossibility of laying out or providing a fair task for each where so many are concerned, with sudden influx of necessitous applicants for employment, trying beyond endurance the energies of local officers solicitous about the fair day's work.

Doubtless in theory it is right to lay stress upon the labour test; but, if not fulfilled in practice, I do not think anything of blame should attach to the responsible officers, or anything of regret be entertained about it at all. Principally I think it should be stringently enforced when, after the pressure of high prices has abated, the relieved people show any tendency to remain on the works.

There remains the *wage test*, which I understand to be a willingness to work as directed for a wage sufficient to purchase a subsistence allowance of food.

I have seen several works conducted on this principle, and have formed the opinion that on such works, situated near to a town, or bazaar, or banias' shops, where the people can lay out the pice they receive to advantage, very good results, even to the saving of many lives, have been obtained; but that on works far in the lonely country results have not been favourable, or the appearance of the work-people conducive to the belief that they are improving in condition. And I think this unfavourable result has been due in greatest measure to the facts that the wage received will not provide a subsistence allowance of food on the works, that means for properly cooking the food are not available, that night shelter or night clothing are often non-existent, the day clothing often but a little old rag. Yet shelter and clothing are as necessary for healthful life as food. When food, shelter, and clothing are all deficient, excessive mortality will result, and the good results of a famine relief work can best be measured by a record of

mortality on the work. No such records are available, but I have reason to believe, as the result of local inquiry, that many persons have died on such works during the past six months in this province.

I think all we know concerning the amount of food required to support healthful life in this province has been learnt from our experience of prison diet and its results. The smallest diet ever allowed to an adult prisoner, and that only in recent times, has been 16 oz. of flour and 4 oz. of dál, all properly cooked and seasoned; and the prisoners (all short term) so dieted have been well clothed and sheltered. I have reason to believe that prisoners so dieted have, as a rule, lost weight during their time of imprisonment.

I do not think *that* diet would be sufficient for an adult man on a relief work, But I think the diet of 20 oz. of wheat flour and 4 oz. of dál laid down in the addendum to Famine Circular No. 51A, dated 11th May, is a sufficient diet to sustain life in health; and that the wages for labourers on relief works contained in (*b*), the amended para. 7 of that circular, will suffice on all occasions of scarcity likely to arise, to provide not only the food necessary to sustain life in health for men, women, children, and infants on the works, but leave, by good management, a trifling daily margin of money, which, by accumulation, may permit of the purchase of some article of clothing or cloth, or other necessity of life, for the person concerned.

The diet scale alluded to is valuable, principally as ruling what an individual, of the different sexes or ages, ought to eat to maintain life in health. And for an adult male it provides 20 oz. of wheat flour, 4 oz. of pulse, ½ oz. of salt, and 3 lb. of firewood; costing in all, when wheat, flour, and pulse are at the famine rate of 10 seers per rupee, 1½ anna. For women and children a like diet in proper proportion is ruled, the equivalent in money to be given.

I repeat that these diet scales provide a sufficient supply of food, and if the labourers on the works would, or could, feed themselves in accordance with these scales, the results would be most satisfactory. But, so far as I know, they often cannot do it, and I think they would not, if they could. The important matter is that they should receive the money which will permit of their doing it if they please. On some works that I have seen the wage was not ruled by its power to purchase this diet scale of food, but apparently by facility of distribution of the necessary pice —a man receiving four pice, a woman three pice, a child two pice daily,

And in practice that is the only possible method of distributing the wage.

The wage above mentioned will suffice to purchase the diet scale previously quoted, when wheat flour is selling at 15 seers the rupee, but I have seen it in force when wheat flour on the works was purchaseable at 8 seers the rupee; and there the people were living principally on parched barley and peas mixed, which was also sold at 8 seers for the rupee. These people, a considerable multitude, were generally in bad condition.

Under the most recent orders on this subject, a man here should have received seven pice, a woman five pice, and a child three pice, at least, daily. And in apportioning the wage, the value of food on the works, and not its value at sudder station or market town, should rule its amount.

My experience in regard to the question of food provided on a relief work far from a market town leads me to believe that this important matter should not be left to manage itself by the law of supply and demand. I have seen barley selling at 15½ seers the rupee in the nearest market town, and the same article parched selling on the works in the interior of the district at the rate of 15 pice weight for one pice of money, equivalent to about 7 seers the rupee. Such unnecessarily high rate required the expenditure for food of absolutely every pice received, and yet the people were miserable in appearance, many children ravenous.

I think the grain merchant, if left to himself in this matter, will not risk his valuable stores of grain by carrying them to the works, unless he can see his way to making very large profits which may compensate him for possible loss—a loss very possible indeed from vicissitudes of weather, from theft, from sudden departure of many customers for whom provision has been made, and in other ways well known to the merchants.

The law of supply and demand supposes the possibility of competition, but I have never seen any such condition of things existent in the so-called bazaar (heaps of grain under a tree or under a thatch) of a relief work. The bania or banias there are present by permission or at the request of the authorities generally,—I think at the request of the tahsíldar; and without such permission or request no competing bania would be likely to put in appearance.

I believe great good would result to the necessitous people by the establishment of Government grain stores in connection with a famine relief work—not stores in which Government shall be the buyer and seller, but in which Government, having advanced the cost of the grain, shall be in a position to exact from the bania a fair rate of sale on the works. So much once fairly established, the rate of wage can be justly apportioned without difficulty. Government being interested, the bania will be protected, his stores well housed on the works, the shops well distributed on the line of works.

And now I should say that although the rate of wage is very properly calculated upon its power to purchase a certain amount of food, as described, it will not all be so expended by the majority of the recipients. Long before the works have been established, the people who come to them have, as a rule, lived after a fashion which unfits them to venture upon such extravagant living as the diet scale provides. They are emaciated; have become familiar with fasting; their clothes are in rags; their brass vessels and every saleable article they possessed have been parted with. They come often in families, husband, wife, children, all their property a basket containing two or three earthen pots or wooden dishes. To people so reduced the longing to save something out of the subsistence allowance granted is irresistible. These minute savings are principally hoarded, I think, with a view to their expenditure for such amount of cloth as will save them at least from absolute nakedness. And these savings are possible, because the people eat less than the scale, and certainly never purchase fuel, and seldom salt or pulse. They live principally on parched barley, parched peas, or parched gram, and comparatively little flour of any kind is consumed on the works. Bread is seldom made; it is too expensive; the means for its preparation and cooking are not easy of attainment; and I have not in connection with, or near, any relief work, seen any considerable number of *chulas*, which would be a prominent feature there if many people made bread. And even if the people wished to make bread, I do not think, speaking of works far from a market town, that they could buy the necessary flour. I think inquiry would show that the banias do not keep any large supply of flour on hand, but as an established practice grind daily so much corn as they require for sale as flour; the reason being, that whereas in this country grain is easily kept in good condition, flour quickly spoils; and I doubt the probability of flour of any kind being supplied in large quantities on a relief work.

Supposing by way of example that a relief work giving employment to 10,000 persons is opened in any portion of the interior of a district, and supposing that each person employed would like to purchase half a seer of flour daily, the daily requirement would be 5,000 seers of flour in addition to the ordinary requirements of the neighbourhood. The preparation of so much would require the constant working of at least 250 pairs of millstones, and I doubt if the banias of any district are prepared for such a sudden increase

of demand for flour, or ready to make the necessary increase to their establishments for its preparation.

If the difficulty is great for 10,000 persons, what is it likely to be for 50,000? and the numbers on a relief work have reached that total.

I know that flour of different kinds is purchaseable on a relief work, and is purchased in small quantities by some of the work-people, principally for the consumption of their children, who gather straws, and twigs, and dried stalks of plants (thrown out or left on the land by the cultivators) in the day-time, and with the fuel thus provided, water is heated in the evening-time, the flour stirred into it, and the resulting stirabout given to the children. But fuel suitable for making bread on a large scale cannot be obtained in this way, most certainly not after the work has been open for a few days; and, so far as my experience goes, work-people will not buy fuel. At only one relief work that I have seen had a wood-seller opened a shop, and as he could sell no wood he soon returned to his home.

If wood is necessary for the preparation of bread, it is not less necessary for the preparation of dál; and although on relief works near to a town I have had reason to believe that bread was made in considerable quantity, I have not been able to find any collection of necessitous work-people who as a rule ate dál or salt with their bread.

The staff of life on relief works, so far as I know them, appears to be parched grain brought in large quantities ready parched from the nearest towns, and even parched on or near to the works, the fuel used being the dried leaves gathered from the groves of the neighbourhood, of which great quantities seem to be obtainable for the trouble of collection. To an uncertain quantity of this parched grain (usually barley, peas, or gram, alone or mixed) an addition is made of any eatable thing that can be got for nothing —weed-like *sags* (spinach) gathered from the fields, kernels of mango-stones, roots of lilies, and other things counted valueless, which people who know where to look for them can find in considerable quantities. And so life is kept going fairly well as regards the majority, and something of the wage is saved for other than food purposes.

I think the Government view of this matter is that the money given will all be expended in food, to the speedy recovery of health and strength.

But that is not the view of the work-people, nor of any people in the world, that all they get shall go in food. Practically the people know that food alone will not save them from disease. They have longings for better coverings, longings for tobacco, longings for something of luxury, sour or sweet, as dahi or gur, want a mat to lie on, want even to save a few annas to commence life with when they are able to get back to their homes.

So they economize to the utmost verge of possibility as regards food proper, often indeed to their own detriment.

I have on several occasions listened to the argument that a certain remarkably low wage as compared with the value of grain on the works must be sufficient, because pice have been found in the possession of some of the poor people, or tied in the rags of those who have died. Whereas I feel certain that, however low the wage may be, consonant with the power to attract labourers at all, something of it will be kept for other than food purposes. And it is this which makes it so essential that the power of reducing the wage in any serious degree below the amount known to be necessary to support life in health should be very sparingly exercised, if exercised at all.

Concerning the labour which should be exacted in return for the subsistence wage, my experience is that the people who come for relief are willing enough to work if they can be shown what they have to do, and are able to do it. The multitude are made up of a minority of strong persons and a majority of weak, and all the works I have seen were earthworks for the improvement or making of roadways or railways—work which every person can do without teaching. I have seen the people working in a confused crowd, so that it was hard to tell how much each person did; and I have seen them working in gangs with considerable amount of order and regularity.

The best managed work, in regard to this matter, I have seen was one in which the people were divided into gangs of 100 persons, every 100 consisting of about 20 strong persons (men) with spades, and 80 weak persons (women, old men, and children) with baskets. The daily task marked out for these 100 persons was the digging and carrying of 1,000 cubic feet of earth: the 20 men digging it, and the 80 weak persons carrying it, a lead of about 40 yards there and back. The digging of 50 cubic feet of earth is about half a day's work of a strong practised excavator working with a good spade. The men on this work had bad spades. If all the weak persons worked equally, they carried about 13 cubic feet each. Their baskets as a rule were small and broken, and perhaps to carry a cubic foot of earth they would have had to traverse the lead 10 times. (I find by experiment that a cubic foot of damp garden mould weighs about 70 lb., and I do not think the people carried more than 7 lb. at each trip.) If these data are correct, it follows that each of the weakly persons traversed 5,200 yards (about three miles) to perform their day's work—a light task, but yet I think a sufficient labour for persons in bad condition as they were. Not that they would not have done more if more had been asked of them, for I have seen a relief work in which the lead was 280 yards there and back, two cowries being paid for each trip as the basket was emptied.

In the town near that work 64 cowries at that time were equal in value to one pice. It follows that the people had to traverse 8,960 yards to earn a pice and about 20 miles to earn an anna. Yet they were working to the number of about 500 persons, many in fair condition, some in bad, very earnestly and at quick pace. The work had been commenced only the day previous to my inspection.

The severity of the labour being recognized, the rate was altered to three cowries a trip, thus reducing the traverse to about 13½ miles for an anna. In all 84 trips would have to be made at this rate to earn one anna; and on the assumption that 7 lb. of earth were carried on each trip, the cubic foot weighing 70 lb., it follows that about 8½ cubic feet only would be carried by each person. Yet the labour here was infinitely greater than that of the 80 weakly persons who carried 13 cubic feet each.

When task-work is to be exacted, there is perhaps no better method of exacting it than by the use of this *cowrie trip* system (tin tokens, if necessary, being used as representatives of cowries), the wage being apportioned by the length of lead, say at the rate of 50 yards for one cowrie, which equals a traverse of 11 miles for six pice.

But, however the matter is managed, above all things earnest attention must be given to the lead, so that on no account may a distressed person who has really laboured well be subject to a deduction from the sanctioned full allowance by reason of the small results achieved.

Ideas of a day's earthwork labour for a strong excavator appear to differ. I have heard a chief engineer put it at 200 cubic feet dug by the man and carried by a woman and boy, a lead of 40 yards there and back. That is a gigantic task, as anyone may learn by making the necessary calculation. It is probable that if they carried 10 lb. at each trip, the woman and the boy would each walk about 16 miles. A subordinate engineer put it at from 100 to 120 cubic feet for the same three persons, which is more likely to be the correct average, I think. Some definite statement in regard to what constitutes a day's labour on a relief work is required, I think, seeing that the payment is only a subsistence allowance, that to dig 50 cubic feet of earth, and break it for the baskets if necessary, should be considered a full day's

work for a man in fair or good condition, and that the 50 feet so excavated should be carried by four weakly persons if the lead is less than 50 yards, by six weakly persons if it is between 50 and 75 yards, by eight if it is from 75 to 100 yards, and so on, increasing the weakly persons by two for every 25 yards increase of lead.

When the 50 cubic feet have been carried, those engaged in the work should be considered to have earned their subsistence allowance in full, and I would formulate the conditions of the wage test accordingly. With a task so lightly apportioned and adjusted, I do not think any applicant for relief would refuse to perform it, excepting such as were physically unfit, proper inmates for the poor-house.

The distribution of the wage is a matter of great importance and considerable difficulty. In all the works that I have seen the wage was distributed daily, and on two occasions certainly I have heard the local officers complain that the distribution could not be completed until past midnight.

Now I do not think the business of distribution of pice can be effected with justness and regularity after the daylight has passed away. Though I have heard many and bitter complaints of the high price of grain on the works, I have never heard any person there complain of not having received the promised daily wage. I suppose such a thing may have happened, but it must be rare. It is more possible that some have received a double wage, especially when payment has been made in comparative darkness.

I have an idea that a principal reason why the distribution of the wage extends into the night-time is that the officers who superintend it are disinclined to commence the arduous work until the sun has got low in the heavens. From what I have seen, I think the condition and circumstances of the European and Eurasian officers who live upon and direct the works, during all the months from April to October inclusive, make them fit subjects for commiseration. During all that period their existence is in great measure a struggle against disease, likely to arise from such causes as insufficient shelter, unwholesome water, excessive temperature, and uncertain food supply. Under these circumstances it is scarcely reasonable to expect that they should labour in the open between the hours of 10 A.M. and 6 P.M. And it is very necessary that, whenever a famine relief work is opened, a paymaster should be appointed to a certain fixed number, say every 3,000 of the labourers. The payment of so many, if ten can be paid in a minute, will take five hours' time to complete; and I think one-half of the work-people should be paid in the morning, and one-half in the evening. The paymaster, besides the duty of paying the labourers, should be responsible for the purchase and counting of the necessary pice; and the banias of the works should be required to sell the pice they receive to the paymaster at a fixed rate per rupee, payment to be made by order on the treasury, so that the paymaster may have to send to a distance from the works for as few pice as possible, and may not have to keep much silver on the works; and to facilitate this business of exchange, I think the paymaster's office and the bania's shop should be in close proximity.

The daily payment, and in pice, to each individual seems to me inevitable where the payment is a mere subsistence allowance. If paid by gangs in silver, loss in exchange will probably accrue to the recipients, and it will be quite impossible to ensure that each individual receives his subsistence allowance in full.

Dr. W. Walker.—Any remarks which I have to make on the so-called "wages test" are the result of observations on the diet of prisoners.

2. As a first principle it ought never to be lost sight of that the amount of food required by an individual depends essentially on the labour exacted from him.

3. It is generally agreed amongst authorities in Europe that a European of average height and weight in moderate exertion should have a diet containing a daily allowance of—

Nitrogen	300 grains.
Carbon	5,000 „

4. Further, I find that the diet scale fixed by the Prisons (Scotland) Act of last year for prisoners confined in the Scotch prisons is graduated into nine divisions, varying with the labour exacted, the age and sex, from a diet containing only—

Nitrogen	123 grains.
Carbon	2,812 „

to one containing—

Nitrogen	327 grains.
Carbon	6,268 „

the former being for prisoners sentenced to three days or less without labour, and the latter being ordered for adult male prisoners imprisoned for more than 60 days with hard labour.

5. The labouring diet scale of the prisoners in the jails of the North-Western Provinces and Oudh consists of an average daily allowance of—

Wheat flour	20 oz.
Pulse	6·4 „
Vegetables	3·5 „

and its nutritive value may be stated as—

Nitrogen	300 grains.
Carbon	4,488 „

6. Now, if it be the case, as is asserted by physiologists, that the quantity of food required by an adult is proportionate to his weight, and if 300 grains of nitrogen and 5,000 grains of carbon be sufficient to support in moderate exertion Europeans whose weight averages 150 lbs., a reduction ought to be made in the allowance for natives proportionate to their weight. What does this imply? I have taken the weights of 20,000 prisoners on admission into our jails, and find the average to be 109 lbs.; so that we may, according to the opinions of physiologists, reduce the scale for Europeans in the proportion of 150 to 109 to find a ratio which ought to support an average native under moderate exertion; this will mean a diet containing a daily amount of—

Nitrogen	211 grains.
Carbon	3,633 „

7. As I have said above, the nutritive value of the North-Western Provinces prisoners' labour scale is—

Nitrogen	300 grains.
Carbon	4,488 „

Convicts on this diet performing moderate labour gain weight as a rule. The prisons contain a mixed community of workers, part employed in the menial duties of the prison, part in the sedentary occupations of the factories, and a few on the labour of grinding wheat, building works, pulling water, &c., and it is seldom under these circumstances that any man falls off in weight.

8. At the same time I have practical evidence that if prisoners on the above diet scale are kept continuously on really hard labour, involving considerable muscular exertion, it is done at the risk of their losing weight rapidly and finally breaking down.

9. This evidence has arisen during the employment of large bodies of prisoners on the building works of the new prisons—works very similar in kind to the ordinary relief works started in times of scarcity. The labour consists of digging, carrying, and pugging clay, of making and carrying bricks, stacking and unstacking kilns, &c., &c., and the workers are so dependent on each other that if the discipline officer (usually a European) in charge of the gangs does his duty, the whole of the men labour continuously at high pressure. Under these circumstances, in three separate convict prisons I have found it necessary to intermit the labour, to change the gangs, and to increase the daily diet by 4 oz. extra of wheat flour.

10. One series of observations carefully made by Surgeon David Wilkie in the Benares Central Prison may be noted here. They were made on a gang of

Ch. III. Qn. 6.

North-Western Provinces.

439 men employed, as I have described, continuously for five months. These men had the same diet as the ordinary convict sentenced to labour, the nutritive value of which I have before stated to be—

Nitrogen	300 grains.
Carbon	4,488 „

At the end of five months 75 per cent. had lost weight, five per cent. remained of the same weight, and 20 per cent. had gained weight. Not only had a large proportion of the men lost weight, but they were much more liable to attacks of sickness than the other prisoners. Thus, the average strength of the prison population during those five months being 2,114—during the first month, of 86 men received into hospital 40 came from the building gang; during the second month, of 95 sick 42 came from the works; during the third month, of 119 sick 58 were from the works; during the fourth, 48 out of 92; and during the fifth month, 30 out of 62.

11. Take another example from the Panjáb, the facts connected with which are recorded at page 11 of the Appendix to the Prison Conference Report for 1877.

12. The ordinary labour diet scale of the Panjáb jails is of higher nutritive value than that which I have described to be in use in the North-Western Provinces; yet when prisoners were sent out to Rupar, and engaged continuously on heavy earth-work, it was found that they very soon broke down. "They lost weight," the superintendent states, "at "the rate of 3 to 4 lb. per man per week." The diet was increased gradually, experimental weighments being carried on, and the equilibrium between diet and work was not established until each man received 10 oz. of wheat flour and 4 oz. of gur daily, *over and above the ordinary labour diet scale of the Panjáb jails.*

It must not be forgotten that the works were only open and wages only paid six days out of the seven; the actual available diet is therefore only six-sevenths of the daily scale I have mentioned above.

It will therefore appear from these facts that the prevailing wages enabled an adult labourer to purchase daily from $7\frac{5}{7}$ chittacks to $8\frac{4}{7}$ chittacks of rice and dál, without allowing any margin for condiments or contingencies, and that they subsisted and worked on this diet for over a month without any visible or appreciable deterioration of their physical condition.

I believe that natives not only can, but that large numbers do, exist on half a seer of raw food per day. Three-quarters of a seer they themselves consider a full diet scale. They regard a half seer diet as insufficient, but admit that it is enough for bare subsistence.

18. My conclusion, therefore, is that if even a moderate day's labour is exacted, the "wage test" should be fixed so as to enable a full-grown man to purchase a daily diet containing not less nutrition than—

Wheat flour	20 oz.
Pulse	4 „

The value of the above articles of diet may be stated at—

Nitrogen	255 grains.
Carbon	4,082 „

And I am of opinion that men will be able to do a moderate day's labour on this diet with the usual allowance of condiments and firewood.

19. If, instead of wheat flour, "coarse flour, such as is ordinarily eaten by the people of the locality" (see para. 8 of Chapter I. of Circular No. 51A of 1878), be made the basis of calculation, the nutritive value will fall thus;—

If bájra be the basis of the wages test he will receive—

Nitrogen	211 grains.
Carbon	4,082 „
If juár—	
Nitrogen	1,908 „
Carbon	4,082 „
If barley—	
Nitrogen	187·6
Carbon	4,082

20. Notwithstanding these reductions in nutritive value, I am inclined to believe that the 10 chittacks diet scale, with two chittacks of pulse, may be safely adhered to, or at all events that Government is justified in prescribing that diet as a maximum. I ground this opinion on the view that most natives will be able to supplement the allowance with articles of food pressed into service under difficulties, although not ordinarily regarded as food; that Government commits a suicidal policy if it attracts labour to its relief works by an ultra-liberal allowance; and because I believe that in most cases labour on the relief works is very moderate indeed.

21. At the same time I am of opinion that where relief works are continued *over months instead of weeks*, measures should be taken to ascertain by weighments of a certain number of the labourers whether the diet is in reality an equivalent for the labour exacted or not.

Dr. W. Walker.—No reference is made in my remarks regarding the experimental scale of eight chittacks flour plus two chittacks pulse diet for prisoners under sentences of less than a month, because it is still *sub judice.*

Even if it be found that this reduced diet may be safely given to short-term prisoners, it by no means follows that it would be safe to prescribe it as a scale for relief wages. A short-term prisoner in most of our jails is not (from causes into which I need not here enter) subjected to hard physical exertion. Such labour as is exacted from him is given to him *in the jail:* and it is mostly *sedentary.* On a relief work, on the other hand, the labourer has to travel distances varying from 1 to 10 miles in going to and returning from his work, and while at his work he is constantly on the move, digging or carrying less or more earth. Give the labourer eight chittacks wheat flour and two chittacks pulse *at his own cabin door,* and let him spend the day spinning ban or munj or picking wool under the neighbouring pipal tree, and I have no doubt he will exist for a long time on the short diet scale.

Again, in prescribing short diet for short-term prisoners, there is a *punitive element* present which I suppose is not meant to be imported into the consideration of the wages test for a relief labourer. I have found it impossible as yet to provide really hard labour for all our prisoners. In its absence I think it possible to make short terms of imprisonment equally deterrent by prescribing short diet for light labour. Under the daily supervision of a European medical officer this is possible in a jail; but no argument can be drawn from these premises for the introduction of such a scale upon relief works.

Bengal.

BENGAL.

Mr. Magrath.—No contingencies need be estimated for in calculating the ration; condiments are all that are required, and not very much of them. The wages given by us at the beginning of the famine of 1874 were $1\frac{1}{2}$ annas per man, 1 anna per woman (boys above 10 being also paid at this rate), and $\frac{1}{2}$ anna per child. On this they throve with rice at 10 seers, which gave, making a deduction for condiments, one pound and a half, one pound, and half pound for the respective rations. This rate was never altered till the introduction of grain payments, but for a short time Government rice was being sold at 11 seers. The medical men who saw them described the physical condition of the labourers, who had been at work

some time, as good, and I think they did well on it. Single men spent their whole wages, but in families where there were several men and a lot of children after a time a pice or so was put by. In Madhubanni the people are rice-eaters, and they had no other food to buy except the Government rice. The price of rice in the case I refer to was fixed by Government. I would, if I were again employed, pay exactly the same wages under similar conditions, modifying it slightly if grain rise or fall.

Mr. Finucane.—In Dinagepore, and, I believe, in the Bengal districts generally, women cannot be induced to resort to relief works. In such districts I would fix wages at such rates as would enable each labourer on relief works to earn a bare subsistence for two persons. The female members of families could be thus supported by the male members on relief works; two and a half annas per day was the rate fixed in Dinagepore. Rice sold at 12 seers per rupee. Allowing three-fourths of a seer per diem per head, two persons would consume daily one and a half seers, or two annas worth. There therefore remained half an anna per day for condiments and other necessaries. Women and boys were paid from four to eight pice a day, according to age and capacity. The labourers receiving the above-mentioned wage were in good physical condition. The following statement shows the amount of money paid in wages and the amount expended by relief labourers in purchase of Government grain in the Patiram circle:—

Month.	Amount paid in Cash Wages.	Quantity of Government Grain sold to relieve Labourers.	Price, at 12 seers per rupee, of Grain sold to Labourers.	Average Number of Labourers.
	Rs.	Maunds of 80 s. w.	Rs.	
April	24,922	6,356	21,186	7,488
May	30,075	7,990	25,633	*5,627
June	17,895	4,719	15,730	4,276
Total	72,892	19,065	62,549	
July, August	No cash.	Payments.		

* Decrease in number in May was due to the opening of new circles in the neighbouring thanas.

In Behar, where women resort more freely to relief works, a smaller wage would suffice, and even in Dinagepore I would not, with my present experience, give more than two to two and a quarter annas per day.

Moonshee Ishree Pershad.—Money wages should be given with the consideration that a child between 8 and 16, a woman, and strong man could obtain with it ⅜ths of a seer, ½ a seer, and 1 seer, respectively, of edible prepared grain. There is no need of considering condiments or contingencies, every one will be able to make his own arrangements for condiments and contingencies, if wages be given with regard to the above rates of food.

In special relief works under me, I gave two annas to a strong man, one anna to a woman and old man, and nine pies to a child between 8 and 16. I gave half an anna gratis to children under eight if they attended the works. The price of rice was eight seers per rupee.

Mr. Metcalfe.—My firm conviction is that piece-work at liberal rates, either for gangs or for families, is the proper mode of payment on relief works during times of distress. There can be no mistake in measuring up the quantity of earth-work excavated; and if the labourers are paid at a rate, either in grain or money, sufficient to keep body and soul together, and allowed to do that work choosing their own hours, whether by day or by night, not only are better results obtained, but the really lazy are kept away, and only those in real earnest accept employment. A very fair rate for piece-work is four annas per 100 cubic feet.

Where payment is made in grain the following table may be followed:—

TABLE for CALCULATING the PAYMENTS in GRAIN as equivalent to MONEY.

Money.	If cleaned Rice at 11 seers.	If cleaned Rice at 11 seers.	At 13½ seers.	REMARKS.
Rs. A. P.	Mds. s. c.	Mds. s. c.	Mds. s. c.	
1 0 0	0 11 0	0 12 0	0 13 8	The price for one dhur is reduced to five annas. The figures opposite represent the equivalent in grain; for each lead in tank-work of 50 feet add 1 anna, which at the different rates for different qualities of rice will be either 11, 12, or 13½ chittacks.
0 8 0	0 5 8	0 6 0	0 6 12	
0 5 0	0 3 7	0 3 12	0 4 3½	
0 4 0	0 2 12	0 3 0	0 3 6	
0 2 0	0 1 6	0 1 8	0 1 11	
0 1 0	0 0 11	0 0 12	0 0 13½	

	Ft.	s. c.
Up to-	50	4 3⅓
„ -	100	5 1
„ -	150	5 14½
„ -	200	6 12

In the Behar famine only rice was served out to the distressed, although in some instances and for some time ⅛th of the rations was paid in money for the purchase of salt, &c. This payment was afterwards stopped, as it was found that, although a district may become entirely shorn of its principal grain during a famine, there is always sufficient dál, musallas, and salt in the hands of banias, and the labourers themselves readily exchange small portions of rice for salt and other condiments. I have already stated that eight chittacks is sufficient for an adult, five for a woman, and three for a child, but in cases of extreme debility milk and sugar may be allowed. My experience is that the condition of labourers on this quantity is good, and the quantity of food sufficient to sustain life without exhaustion. In order to formulate the condition of the wage test, it would be necessary to ascertain exactly the selling price of

food. Now, in the Behar famine, Government were both importers and sellers during certain periods of the famine, and the wage test was regulated according to the selling price of grain. In a district where grain is in the hands of mahajuns, it would be necessary for a local officer to formulate the rate of wages in proportion to the market price. According to the above table, the equivalent in grain for 100 cubic feet of earthwork, raised within 25 feet of the excavation, would be two seers 12 chittacks; as one man and two women would do this work in a day, they would have a surplus of 26 chittacks for each 100 cubic feet, which would be quite sufficient to sustain the sick and infirm members of the family at home.

Mr. Kirkwood.—My own idea on the question of the amount of wage is that on light-labour works, with women and children only, or almost only, to deal with, a minimum wage, such that the very weakest could earn it, should be a fraction (say one-sixth of an anna) over the price of 1 lb. of good clean rice, or of food equally nutritious. There should be no maximum wage. In Cuttack and Bhagalpore, on the light-labour works, the women were generally 75 per cent. of the workers, children above seven and under 12 years of age 20 per cent., and feeble men 5 per cent. In Cuttack the average wage earned by women per diem was about 5 pice, sufficient for the purchase of 1 lb. of rice (selling at 12 seers per rupee) with three pice, of condiments with one pice, while one pice, more or less, went to the support of an infant child, or was laid aside for purchase of clothing, or for replenishing the baskets, which they had to provide for themselves. This 1¼ anna could be earned by excavating and depositing at the proper spot 20 cubic feet of earth. Occasionally, when on first coming to the works, people were found very emaciated, they were allowed to earn that amount by excavating and depositing 15 instead of 20 cubic feet. This high rate of remuneration was also given generally in July, during the height of the monsoon, when on many days work was impossible. The actual rate generally paid was Rs. 3.14.6 per 1,000 cubic feet; the exceptional rate above noted was Rs. 5.3.4 per 1,000 cubic feet; the average of both together, over the whole period of operations, was Rs. 4.3.0. On these rates the people were found to prosper, to regain strength, and to be cheerful and industrious. The average monthly earning per head on the works was about Rs. 2.6.0, which represents about 19 feet of work a day; more, of course, at the Rs. 3.14.6 rate, and less at the Rs. 5.3.4 rate. The Public Works Department (in which I include the Irrigation Company) labourers were also paid by piece-work. Their ordinary rate was Rs. 2.4.0 per 1,000 cubic feet. In 1827, with food selling at the Government stores at prices from three to two and a half times the ordinary rates, it was raised to Rs. 3, or an advance of 33 per cent. The contract system was in force (I believe it worked well), and the authorised deduction by contractors for baskets, &c., left about Rs. 2.12.0 with the labourers.

The Public Works Department varied their rates according to the difficulty of the work, the depth of the excavation, the length of the lead. The average rate was as above. We, on our light-labour works, did not thus vary our rates, except when the difficult or easy nature of the work was very marked, the leads very long and tedious, or very short and easy; believing that the work, as a rule, very fairly struck its own average rate. Such work, for instance, as the excavation of the centre of a large tank, or deep digging in a canal was regarded as meriting exceptionally high rates. There were many women and children who preferred working with their male relatives on the Public Works Department works, whenever they were near their villages, to working apart from them on our light-labour works. This drawback to the average out-turn on the departmental works must be borne in mind. The women and children used to carry the earth. Situated thus, each Public Works Department labourer averaged, I believe, about 50 cubic feet per diem, which gave him two annas, or enough for 1½ lb. of rice, a pice for condiments, &c., a pice for clothing, and two pice as a reserve for the repairs of the house, or for his support when he had to betake himself to cultivation. In Bhagalpore wages were paid in grain; and the average monthly earning per head on light-labour works was an amount of grain then worth Rs. 2.4.0. The average out-turn per head was 25 cubic feet per diem. The rate paid was at the commencement 12 lb. of grain (value then 8 annas) per 100 cubic feet. This rate was of short duration and was reduced to 8 lb. (which the selling rates changing, was of an average value of 5 annas), when the people gained in strength and ability to use the hoe. The former rate was slightly less than our Rs. 5.3.4 rate per 1,000 cubic feet in Cuttack, the latter somewhat less than our Rs. 3.14.6 rate. The Bhagalpore rate was subsequently still further reduced. The work was generally lighter in Bhagalpore than in Cuttack, involving less deep excavation and less long leads. The people, to begin with, had not fallen into so feeble a state as those in Cuttack, and there was some experience available which was wanting in Cuttack. The average out-turn was consequently more by one-fourth, which made up for the lower rate of remuneration and left the apparent average cash earning per head almost equal to that in Cuttack. It was, however, if the Cuttack cash earning be turned into grain, the proper standard for comparison, really about 7 per cent. less in comparison with the Cuttack rate than it appears to be, because in the more distressed parts of the Cuttack district in 1867, and the light-labour works lay in those parts, the Relief Committee sold rice at a reduced rate, which, on an average over the whole period, was 14 seers clean rice per rupee. The rate varied from 12 to 16 seers per rupee. In Bhagalpore there was one selling rate general throughout the district. It varied from time to time. The retail rates for clean rice averaged 13 seers per rupee. Thus grain was procurable by the light labourers in Cuttack at about 7 per cent. cheaper than was the case in Bhagulpore. The food daily earning in Bhagulpore was thus less by about 12 per cent. than in Cuttack. I have no precise recollection of the rates given in Bhagulpore in 1874, under the Public Works Department.

Looking back over my own experience, and over all that I have read on the subject, I come to the following conclusions:

(*a.*) *On light-labour works.*—A man or woman should not receive less than a wage which comes daily to the value of 1 lb. of rice, or of grain equally nourishing, and half an anna besides; children above seven and under 12 should not receive less than the value of ¾ lb. of grain (as above), and quarter of an anna besides.

(*b.*) *On Public Works Department works.*—A man should not receive less than a wage which comes daily to the value of 1½ lb. of rice, or of grain equally nourishing, with three-fourths of an anna besides.

A woman the value of 1 lb. of grain and half an anna besides.

A child between 7 and 12 the value of ¾ lb. grain and quarter of an anna.

Boys or girls between 12 and 17 the same allowance as women.

Sunday should, in every case, have its own wage, and, I think, its own work. The most strict sabbatarian must think famine relief so good and holy a work that ample sanction is to be found for its full continuance even on the Sabbath. On these proposed rates, I would remark, men and women on light-labour works should get the same rates; for able-bodied women may go to those works, but none but the feeblest men, who neither in strength nor in power of consumption exceed a fairly healthy woman.

Girls above 12 rank as women. No allowance is made for boys above 12 on the light-labour works; but if they are there owing to their feeble condition, they should, if over 15, take as an adult, and if between 12 and 15, as a child.

On no works should any extra allowance be made for infant children under seven years of age. They are not fit for real work. But it is an advantage of the piece-work system that little things of five and six years of age do *something* to increase their mothers' earnings, though they are not shown as units in the total number of light labourers. Their support should be left to their relatives, who will certainly save enough for them with such a rate as that proposed. To give them a special allowance is to open a door to much fraud and many abuses most difficult of check. The only exception should be widows with more than two such infants; her surplus number should then be borne on the village gratuitous relief lists.

On Public Works Department works men should draw more than women. The women, except professional earth-workers, should only be there by choice, as they should have the option of going on to the light-labour gangs. That is not the case with the men.

Similarly, too, all children under 12 would only be on such works by choice. They should therefore get the same as on light-labour. Not so with boys between 12 and 17, who should be on the Public Works Department works, and not on the light-labour. They should get the same as a woman. On all works (under the daily-wage system) a full daily allowance should be given on those days when rain may render work impossible,

Further, in that case, whether daily wage or piece-work is the system, the ordinary rates of each district should be taken as the basis of calculation. I would in that case have the Public Works Department labourers' ordinary rate in any district increased by 25 per cent. whenever grain is from two to two and a half times its normal value. I would not (as was, I believe, done in Bombay) decrease the nominal or real work exacted by 25 per cent., the ordinary wage being maintained. When grain reaches about four times its normal rate, the ordinary Public Works Department rates should be increased by 50 per cent. But it is my strong belief that Government should always take steps to secure the price of food being not higher than treble the ordinary price. With food obtainable at that rate, the ordinary wage should be increased about 33 per cent. Then for light labourers (they will have no existence until the price of food is high) the rates paid should be about 50 per cent. in excess of the Public Works Department rates current from time to time. In Cuttack, with grain obtainable by our light labourers at 12 to 14 seers per rupee, about two and a half times its ordinary price, the ordinary Public Works Department rate of Rs. 2–4 was increased on our light-labour works to Rs. 3.14.6 (exceptional rates apart), or 75 per cent., with the results above noted.

Mr. Kisch.—Labourers will, if they can, purchase that grain of which they can procure the greatest quantity. The labourers of the ceded districts are not accustomed to live on rice, but during the greater part of the famine rice was cheaper than any other grain, and the labourers bought it. When cholum and other grains became much cheaper than rice the labourers returned to their ordinary food. When wheat was the cheapest grain procurable it was sold to the labourers in very large quantities. When much labour is required in order to grind any particular grain and make it fit for food, its price must be appreciably lower than that of other grains to induce labourers on relief works to buy it. Cholum (jowari) was used by the people of the ceded districts in their own homes as soon as it became cheaper than rice. Those on relief works who had to buy or bring from their homes the grindstones required to grind the cholum, continued to eat rice even when its price was considerably higher than that of cholum.

If the wage suffices, a labourer will purchase the amount of grain necessary according to the first assumption made above. He will stint himself in condiments and contingencies rather than not procure the full amount of grain required. If he can get the full amount of grain necessary according to my assumption, he will spend half or a little more than half the remainder in condiments and firewood, if he cannot himself procure the latter readily. The remainder of the wage is for contingencies. A labourer should be able to save a pie or two a day even out of the relief wage. It may save him or his wife or child from starvation when from sickness or some other cause he cannot come to work and cannot manage to get gratuitous relief. It will enable him to live for a few days after the work is closed, and if required for no other purpose it will enable him to buy a few mats to make into a hut on the relief works during the rains, or allow him to purchase a new blanket or cloth after he has been on the work for two or three months.

Mr. Hughes.—Questions 6 to 11 will be best answered by relating my own experience on the Maraudahully project in the Durampury taluq.

This project consisted of a canal about four miles long, 50 feet base, and 8 to 15 feet deep. The number of coolies employed on it varied from 3,000 to 6,000. The organization I adopted was as follows:—

An overseer was appointed to every 1,000 coolies, and a head-cooly to every gang of not less than 50 or more than 100 men. Each gang had a chain of channel. The length of an overseer's charge did not exceed half a mile.

Along the line of canal at intervals we had their workshop bells placed. The first bell rang at a quarter to six. The nominal rolls were then made over to the head-coolies by the overseer. The coolies as they arrived fell in in line on their respective length, and the roll was called by the head-cooly and marked. At six o'clock the bell stopped, the coolies broke off to work, and the head-coolies delivered their rolls to the overseer to be abstracted. At twelve o'clock the bell rang for breakfast. At two o'clock the roll was again called; coolies not arriving to time were marked absent for the half-day.

The overseer and head-coolies were present on the works all day during work hours.

The work was measured up daily, and a report sent in to me by the overseers daily, showing the number of coolies and their distribution as diggers, fillers, and carriers, the distance of lead, the height lifted, and the cost of the work.

The rates were generally from three to five times ordinary rates. The head-coolies were held responsible for a proper out-turn from the gangs; the overseers exercised a general check, and were also responsible for measuring the work, for a proper distribution of labour, and for frequently checking the nominal rolls. When the work was more than usually short, the head-coolies were punished by reprimand, fine, or dismissal. With all these precautions, and with all the driving I could exert, I found the cost of the work was very heavy as compared with ordinary rates. Among others, the chief reasons were:—

The large number of carriers (women and children) to diggers and fillers, that is, men to dig the earth and fill the baskets, and the consequent difficulty of distributing the labourers with reference to the nature of the soil and the lead. In some cases women were employed to pick and fill, and several gangs composed entirely of women were formed. At another time we could not get baskets made quickly enough to meet our requirements. The coolies were told the tasks which would ensure their getting paid at full rates, but I never succeeded in getting them to work up to them.

In one word, my experience is that it is not possible to task efficiently large bodies of work-people exceeding 2,000 or 3,000 paid on nominal rolls. All that can be done is to enforce a certain amount of system and discipline. This applies to my experience in Madras, where the subordinates were untrained lads fresh from college.

Practically it was found sufficient to pay the coolies once a week. New arrivals in the probationary gangs were paid daily by the overseer for the first week; it was found that after a week they could manage with weekly payments.

The payment of the gangs was the work of a whole day, and Sunday was always pay-day. Payments were made in the following manner :—

The coolies were made to fall in in lines on a convenient piece of ground, each gang under its head-cooly, who was furnished with the nominal roll for the week, checked and signed by the overseer.

The inspecting officer (who was always an engineer) then fixed the rates at which the coolies were to be paid with reference to the work done, checked the number of coolies in each gang, told the coolies the rates at which they were to be paid, and why they were fined, and thus passed the roll for a certain stated amount. A number of cashiers (generally about one to every thousand coolies) were present, and they paid each gang in turn, producing the passed nominal roll as a voucher.

Perfect silence was enforced in the ranks. The coolies were not allowed to leave the ranks while payments were in progress, and directly they were paid they were made to leave the ground. Absentees at time of payment forfeited their dues, unless they were in hospital; and complaints were heard and decided on the ground by the officer in charge of the payments.

Under this system innumerable instances of fraud were discovered;* whole nominal rolls had been forged; villagers were brought in to personate coolies for the day, &c. I regret to say that it was found so troublesome to prosecute these cases in the magistrate's court, some thirty miles off, that most of the offenders escaped punishment. As a rule, the officer in charge of large relief works should have the powers of a committing magistrate, to enable him to deal with these cases.

A system of ordinary piece-work should be adopted as much as possible, and the coolies should be paid for work done at rates fixed with reference to their physique, the nature of their usual occupation, and the price of food. The headmen of a gang should be allowed a commission of an anna in the rupee, and the coolies kept informed of the rates at which they were paid, and of the proportion to be deducted from their earnings by the gangmen. Any infringement of these rules should be promptly dealt with in the presence of the whole gang. All able-bodied persons should be employed on piece-work, and paid for work done. Gangs paid at daily-labour rates on nominal rolls should be reserved for emaciated and weakly persons and women.

Mr. Brookes.—I have not much experience with the wage test, as on the duty that I have been I have always been permitted to adopt the piece-work system. The daily-wage system *is the worst and most demoralizing that can be resorted to,* and it never succeeds.

When labourers know that their wage is fixed they study to do for it as little work as they can, and it requires a very large establishment to get from them even half a day's work for a full day's pay.

Fining is useless, and very objectionable, as the petty subordinates have to inflict the fines, and this gives them a dangerous power to turn to their own advantage.

The only effect of enforcing fines on daily labourers is to deprive the labourer's family, or, if he has no family, he deserts for a more liberal paymaster.

In the Orissa and Bengal famines the ordinary normal rates for work were paid with an increase in proportion to the enhanced prices of food-grains.

When labours earn full wages their consumption of rice is from 1½ lb. to 2 lb. per diem for each adult, with from two to three pice for condiments, firewood, &c.; children from seven to twelve years of age, ½ lb. of rice, and condiments in proportion. Ordinary coolies, as a rule, seldom get more than 1 lb. of rice per diem, and they can live on this with the usual allowance of condiments.

The price of the standard kind of food is taken at the local market rate when a money wage is paid.

I should say a fair day's wage for a full day's work would be 1½ lb. rice + two pice, which would generally represent about two annas; half the amount for children between seven and twelve. But I would only allow daily wages for the first three or four days after admission to the relief works, and then only if necessary.

Baboo Hari Mohan Chandra.—Food.—Adults must have at least ¾ seer of 80 tolas per day, children 1½ powa of 80 tolas per day, with some extra allowance for condiments, &c. In years of plenty the adults and children take not less than one seer and half a seer respectively a day. By doing task work, each able-bodied man earned not less than 3 annas, some 4 annas a day, and children of 14 or 15 years, 2 annas a day. Each labourer earned on an average 3 annas per day; and taking one wife and one child who had to be fed by each labourer, we have 3 annas for two adults and one child. Rice was sold at 12 seers of 80 tolas the rupee in 1874, ¾ seer for each; for two, 1½ seer, equal 2 annas; 1½ powa for a child about six;—in all, rice for three as above equal 2 annas and 6 pie, leaving two pice for condiments, &c. Coarse rice was purchased by the labourers. The wages should be only sufficient to buy food actually required to support life, with a margin for condiments and contingencies.

Mr. Lowis.—In my instructions to my circle officers I directed the enforcement of a labour test, the work done being paid for according to a fixed standard. In one circle the officer in charge could not, he said, enforce the labour test, giving various reasons for his inability to carry out orders; the result was that the numbers on his works increased so fast that it was evident that men were being paid for doing nothing. At length my orders were enforced, the labour test introduced, and at once the numbers fell. The pay may be reduced to a bare subsistence, but there will always be a certain number of idlers attracted, who, in spite of every effort, will get paid for doing comparatively nothing. I have no proposal to offer as to the conditions under which the wage test may be applied, as I am quite convinced that it is no true test of real want. It is almost, in fact perfectly, impossible under it to prevent persons getting paid for doing no work at all, or, at best, a very unsatisfactory amount of labour.

* In several cases the head-coolies forcibly took away some of the coolies' earnings directly they left the ground.

CENTRAL PROVINCES.

Mr. Nicholls.—

Men - -	1½ lb.
Women - - -	1 lb.
Boys from 15 to 12 -	
Girls from 14 to 11 -	
Boys from 12 to 8 -	¾ lb.
Girls from 11 to 8 -	
Children - -	½ lb.

I should always expect the people to group together and assume the relation of members of a family, in fact share in common. I should expect them to maintain their children and those who fell temporarily sick and those who could not work from infirmity. Therefore I should roughly aim at giving each earner a trifling margin for such contingencies. That is, I allow them just what I think they would consume in ordinary times, and they would have to pinch themselves a little to meet casual calls.

I should also give a margin, always given in cash, of one pice a head each day for salt and condiments and fuel.

BOMBAY.

Mr. Hewlett.—I think the standard diet scales for prisoners in jails are very good guides as to the quantities of food to be given to labourers. These are as follows:—

—	Bajree, wheat.	Jowaree flour.	Dhall.	Vegetables.	Salt.	Condiments.	Oil, sweet.	Cocum or tamarind.	Animal food.	Fuel.	REMARKS.
	lbs.	oz.	oz.	oz.	drs.	drs.	oz.	drs.	oz.	lbs.	
Long term prisoners on *bonâ fide* hard extra-mural labour.	1	8	5	8	6	8	1 drs.	8	5	1	The meat is given from once to thrice a week in lieu of dhall, dependent upon the season of the year and work on which the prisoners are employed.
Long term prisoners on intramural medium labour.	1	4	4	6	6	4	4	8	4	1	
Prisoners sentenced to hard labour for three months and under, simple imprisonment, under trial, women and juveniles.	1	3	3	6	6	4	4	8	4	1	

but during the late famine Government never laid down any dietary. For labourers employed under the Public Works Department the rates of daily wages were at first fixed at 2 annas for a man, 1½ annas for a woman, and 1 anna for a boy or girl old enough to be able to work, but subsequently a sliding scale was introduced by which the rate of wages increased when the staple food grain became dearer than 16 lbs. for a rupee.

A man was paid at the rate of 1 anna *plus* the value of 1 lb. of grain.

A woman was paid at the rate of ½ anna *plus* the value of 1 lb. of grain.

A boy or girl was paid at the rate of ½ anna *plus* the value of ½ lb. of grain.

In addition to the above, an allowance of 3 pies per head for children under seven years of age was given. These wages were paid for six days during the week. No work was demanded and no payment was made for the seventh day.

There never was, during the whole period of the famine, the least anxiety felt about the condition of persons receiving this rate of wages. They steadily improved upon it. If weakly when first received on to the works, they speedily recovered and kept well and strong on it. For labourers on the Civil agency works there was a reduced scale of wages, as follows:—

A man was paid ½ anna *plus* the value of 1 lb. of grain.

A woman was paid ¼ anna *plus* the value of 1 lb. of grain.

A boy or girl was paid ¼ anna *plus* the value of ½ lb. of grain.

In addition an allowance was made of 3 pies per head for children under seven years of age. These wages were only paid for six days.

There was no work and no pay for the seventh day.

Before this scale of wages had been fixed by Government, power had been given to district officers to treat exceptional cases in an exceptional and special manner.

Shortly after the rates came into force I travelled through the Belgaum, Dharwar, and Kaladgi districts, and from what I saw in the latter (where however I subsequently learnt that the instructions of Government regarding expenditure in charitable relief and for the relief of young children had been neglected,) I reported most strongly against the continuance of the rates, and urged that at all events a seventh day wage should be given, but on visiting civil agency works in other Collectorates where the orders of Government had been fully carried out I was constrained to report that the people on Civil agency rates were in as good case as those on Public Works rates, and that they obtained sufficient food to prevent wasting. Subsequent and anxious inquiries into the matter confirmed me in the conviction of the sufficiency of the Civil agency rates for the class of people who come on to these works, and there can be no doubt at all that they were sufficient, *provided* that care was taken to supplement the rates by the treatment of special cases, and by careful attention to seeing that the allowance for young children was drawn and distributed.

The general run of people on the Public Works rates were healthy labourers, mostly in the prime of life, with their families, but on the Civil agency rates, the old, infirm, and less physically capable were employed. The very large majority of these people had private means of their own, with which they supplemented the rate.

In judging of the physical condition of the people, I always took as my standard the condition of the children and young adults, because if they were not wasted I felt certain that they were obtaining sufficient food to keep them in health. On all the works there were, as will be seen in years of the greatest plenty, old men and old women who, as all old men and old women among the labouring classes in this country always are, were lank, thin, and withered; but taking the condition of the young children and young adults as my standard, I was able to say that I considered the food obtained was sufficient to keep them in health and well nourished.

It was the universal experience of the district officers that strong people remained strong and that weakly and emaciated people recovered strength and flesh on these rates. All who required it on first coming on to the works were made special cases of, but to carry this principle out there must be European officers. Native officials, as a rule, in my experience, have not the training or the experience in matters of detail or the power of organization that is essential for carrying out the system.

During a part of the famine, when the price of grain rose so high that only 9 lbs. and under could be purchased for a rupee, the seventh day wage was permitted without work both on Public Works Department and Civil agency relief works. This was a boon highly appreciated. I think myself it should be allowed when the price of staple food reaches 12 lbs. for a rupee. Otherwise I do not think that the conditions of the wage test could be improved, always remembering that they must be supplemented by the treatment of special cases and the payment of the children's allowance. This and European supervision are, I believe, the great reason why in the Bombay Presidency this system was found to answer; but I should add that all persons on civil agency rates should be paid daily and those on Public Works rates bi-weekly, although even on them the new-comers should be paid daily for some time. Regular daily payment is a most important element of success.

Colonel Jones.—I consider that the condition of the labourers employed under me on the sliding scale of wages was fairly good, and that the wages were not high enough to make our works too attractive.

The labourers purchased bajree and jowaree of an ordinary quality. I have no reliable information as to the quantity purchased by the labourers.

The mamlutdars supplied the officers in charge of famine works weekly with the prices of the staple food in their talukas.

General Wilkins.—The wages paid to famine labourers during the late famine were in strict accordance with the sliding scale ordered by Government. This scale was a good one in practice, as in general a man's wages gave him the price of two pounds of grain.

I consider the price of two pounds of grain the proper wages for an able-bodied labourer, and I would formulate the conditions of the wage test on that basis, and regulate the women's and children's wages in the same way.

The famine wages paid during the famine were, as a rule, sufficient for those who were able and willing to continue steadily at work, and who were not hampered in their means by having families with them. Young children were drags on their parents, as they received but a quarter anna, which, in my opinion, was insufficient for their support when suckling infants with impoverished mothers, and also when of more advanced growth up to seven years. Fortunately the poor-houses came in to the aid of the children, and the officers engaged in the districts were particularly careful of the welfare of all the children who came to their notice.

I recommend the following table as a basis on which a scale of wages should be formed:—

Wages.	The price of
Man - - - - -	2 lbs. grain.
Woman - - - -	1½ lb. „
Boy or girl, 7 to 14 years - -	1½ lb. „
Subsistence Allowance.	
Boys or girls, 3 to 7 years - -	1 lb. grain.
Infants - - - -	½ lb. „

The local civil authority gave the price of the standard food once a week.

Mr. Propert.—To the best of my belief, the scale of wages ultimately adopted by the Bombay Government during the late famine was sufficient and at the same time not too liberal. In Khandesh the labourers as a rule did not arrive upon the works in a state of actual starvation, and the wages allowed under the management of the Public Works Department were apparently sufficient to enable the workmen to subsist without difficulty.

The price of the standard kind of food on which the wage was based was ascertained from the weekly return of prices submitted by all taluka officers. I cannot recommend any change in the rules regarding wages laid down by the Bombay Government.

Mr. Spry.—During the last famine I have inspected very many thousands of relief labourers both in this district and in Ahmednagar. Large numbers of these I have inspected periodically and frequently, so that I should have noticed any falling off. In these inspections I have often been accompanied by medical men. My experience is that, provided a man came on to the work in good health and was not attacked by any specific disease, his physical condition did not deteriorate on the famine wage given in the Bombay Presidency, viz., the price of 1 lb. of grain and one anna in cash per diem. Cases of emaciation and of physical weakness often were found, but on inquiry they could always be traced to causes other than insufficiency of wage.

The labourers, as far as I could ascertain, generally purchased either jowari or bajri, whichever at the time might be cheapest; but sometimes they would purchase gram, which had a pernicious effect. A little gram eaten would with copious draughts of water caused a feeling of satiety for the time, but would afterwards bring on bowel diseases which often proved fatal. This gram-eating was carried on, I believe, in many cases for the purpose of saving money, not because the wage was insufficient, and would have been in vogue even if the wage was higher. How they managed it is best known to themselves, but it is an undoubted fact that some did save out of their famine wage, which certainly goes some way to prove that it was sufficient.

The revenue officers ascertained the price of food at the places where the work happened to be, and upon that the wage was based.

I think the wage test as it has been applied in the Bombay Presidency has stood its ground. I would not advocate any other; only that I think that when famine becomes most intense, as it did here, when grain rose to 8 lbs. per rupee, and the money value of the cash payments became less, the Sunday wage should be given in addition to the week days.

My above remarks apply equally to Civil agency as to Public Works Department works, only with the people on the former it was more difficult to judge, because they would not be so strong as on the latter when they first came on. Nevertheless, although the wage was half less in the cash payments, these people did not deteriorate, indeed many improved and were eventually drafted on to Public Works Department Works.

Mr. Charles.—My experience seemed to show that the wage of 1 lb. grain, plus 1 anna, was enough for the *healthy* labourers who could work uninterruptedly, especially during the rains, when all kinds of wild vegetables could be had. But it allowed no margin for accidents, fines, mistakes, and illnessess, and much distress was caused, I think, among women with many children by the rate for children under 7.

I noticed that the condition of labourers who had been working in the east, where there is no jungle, improved very much within a few weeks after they came to Kalghatgi. This improvement seemed due to the wild vegetables and salads which they were able to gather to supplement their rations.

Another point is, that the persons being paid the bazaar price of 1 lb. of grain, by no means always were able to get grain at that rate. Many of the people had no cooking pots, or were unable to get firewood, and I saw numbers of people buying ready-made cakes of jowari, which used to be sold by villagers at rates perhaps more than double the nominal bazaar rate of jowari.

I should have liked to see the rates given as finally settled, with the following changes:—

(1.) Wages on Sundays as usual.
(2.) Children under 7, double the rates they were allowed.
(3.) No fines amounting in any one week to more than one seventh of the total which would have been earned had full pay been given.

Mr. Moore.—The rates of wage were, in my opinion, sufficient, and the labourers who received them were generally in good condition.

The price of the standard kind of food on which the wage was based was ascertained by inquiries made by mamledars or aval karkuns in the nearest market.

Mr. Hamilton.—The wage question is more difficult. I believe that 1½ pound of grain is ample to keep men in good working condition. I am quite opposed to the one pound theory. I do not think any actual deaths from starvation occurred amongst the labourers under me to whom only one pound of grain was given, but they had no strength to work properly, and the birth-rate was abnormally low.

Mr. Percival.—The wages test should be a minimum low wage dependent on the price of grain; it should

be sufficient for weak peple on moderate work to improve in condition; it will not be enough for a strong man on hard work, and he should be allowed to gain extra pay for extra work. The majority of the labourers should be able to earn extra pay. The market price of grain is publicly known, and cannot be much falsified, only care is required that the quotation is for the cheap grain consumed by the common people, and not for best qualities. The minimum wage should be the value of 2 lbs. of such grains as jowari or bajri for a man, 1½ lbs. for a woman, and 1 lb. for a child from 7 to 12 years for six days in the week, and an allowance of three pies for each infant. Out of this a very small part indeed will be expended in condiments. The Civil works wage of 1 lb. of grain and ½ anna for a man was, in my opinion, insufficient when prices were high. People could live on it, but something more than that is required if they are expected to do any work.

Colonel Anderson.—I have a very strong conviction that the Bombay scale of wages adopted in the late famine is full and ample, *if the people actually get it*, both on Public Works and for Civil relief. In the former the labourers in Bombay generally saved something, and as regards the latter, the money equivalent of 1 lb. of grain, plus ½ anna, the infirm elderly people, who would form a large class of the recipients, were much better fed with this allowance than it is probable they had been in their own homes. This money, equal to 1 lb. plus ½ anna, with no Sunday wages, I consider, from investigation, to be about equal, with grain at 16 lbs. per rupee, to two thirds of the amount an ordinary hale labouring coolie would eat when on his ordinary daily work in ordinary times, and therefore sufficient for people of the kind who would come on this form of relief, which involves no work, or only work of a very light kind.

Mr. Robertson.—This question is divided into two main heads:—

Public Works Wage.
Civil Agency Wage.

1st.—Public Works Wage.

When works were first opened, the following scale of wage was fixed by Government Resolution, No. $\frac{166}{792}$, of 4th November 1876:—

A man per diem	- - -	2 annas.
A woman do.	- - -	1½ „
A child capable of working	-	1 „

I was at that time Collector of Dharwar, and finding the above scale did not suit, I recommended that the rate of wage should vary according to the price of grain, with a small cash payment for condiments, &c.

In Government Resolution No. $\frac{186\ C}{827}$, of 15th November 1876, it was ruled that the rates in Government Resolution of 4th November should be allowed if grain was procurable at not less than 8 seers of 80 tolas each, or 16 lbs. per rupee.

Also, that when the ordinary food grain was selling at less than 8 seers of 80 tolas each or 16 lbs. labourers should be paid.

A man to receive ½ a seer, weighing 40 tolas or 1 lb. of grain, or its equivalent in money, and in addition one anna in cash.

A woman, ½ seer, weighing 40 tolas or 1 lb., or its equivalent in money, and ½ an anna additional in cash.

A boy or girl capable of working, ½ seer, weighing 40 tolas or 1 lb., or its equivalent in money, or, at the option of the directing officer, ¾ seer, weighing 20 tolas or ½ lb., or its equivalent in money, and ½ an anna additional in cash.

This scale was modified by Government Resolution, No. $\frac{268}{1038}$, of 13th December 1876, which ruled that when grain was not less than 18 lbs. per rupee, the scale of Government Resolution of 15th November should remain in force.

This wage, it is to be specially noticed, was for the six working days, and no wage was paid for the Sunday.

My own experience is that the Public Works wage is amply sufficient to sustain life and to keep the people in fair working condition, especially if they come on to the works before they have become enfeebled and out of condition. This is, as far as I know, the opinion of most officers who were serving under me in the famine, though at the same time I believe one and all concur with me in the opinion that the wage was not more than sufficient, and that the Sunday wage should have been granted. I have been unable to understand any valid reason for not granting the Sunday wage. Sunday was a day of marked privation to all who daily had large appetites, and could not put something by for the Sunday.

Of course, one day's starving in the week could not fail to have a bad effect. At all large works there were many hangers-on to the bread-winner, people who either could not or would not work, and who, till brought to a very low state of distress and emaciation, would not go to the relief-houses. Eventually these people came on our hands in bad condition, requiring all kinds of special treatment and extra expenditure. I feel, and have always felt, that had the Sunday wage been given it would have been of such aid that much of the extra distress would have been avoided or lessened, and that the Sunday wage would have been money well expended. I have never taken any steps to ascertain the quantity of food purchased. I know that, except in very rare instances, all the cash that was received was expended on food. In places where during the season there had been occasional rain, wild vegetables sprang up, and were obtainable; then the people, by making use of these, were, in a few cases, able to put by a few annas. The staple grains used all over the country are bajri and jowari. In each taluka there is a mamlatdar or head revenue officer, and he on a fixed day in each week supplied the officers in charge of the work with the actual market or bazaar rate of grain.

On all large works a number of people would arrive in bad condition, people still able to work, but still in bad condition. Some, the strong ones, would rapidly improve, the weak ones very gradually, and in some cases with great difficulty.

For some time I have been led to believe that the slowness of recovery of condition was not owing to the insufficiency of the wage and food, but to the method of cooking. The people were not in a condition to digest and assimilate the hard chapatis they made.

This is a point of very great importance, requiring careful examination by competent medical officers.

I have heard that in Kaladgi, when the people were fed on jowari porridge, famine dysentery decreased, and the dreadful foul smell always found where there was a collection of famine-stricken people disappeared. This question calls for careful investigation.

With my present experience, I would, as regards works under the Public Works Department, adhere to the wage rate laid down by the Bombay Government in Government Resolution No. $\frac{186\ C.\ W.}{827}$, of 15th November 1876, and in Government Resolution No. $\frac{268\ C.\ W.}{1038}$, dated 13th December 1876. But I would add thereto the Sunday wage.

And, further, as regards all persons coming on to the work in bad condition, they should be ganged separately, and steps taken to secure that their food should be made up, not into chapatis, but into porridge or pudding, till such time as they had improved in condition and were able to be transferred from the bad condition gang.

2nd.—Civil Agency Rates of Wage.

The rate of wage on civil agency works was laid down in Government Resolution No. $\frac{33\ E.}{103}$ of 19th January 1877.

A man, ½ an anna and the value of 1 lb. of grain.

A woman, ¼ anna and the value of 1 lb. of grain.

Boys or girls employed on the works, ⅛ of a seer of 80 tolas of grain, or, at the option of the directing officers, ¼ anna, and the value of ½ lb. grain.

Children under seven years of age received an allowance of ¾ of an anna per diem, but did no work.

Here also the Sunday wage was not permitted.

The work exacted was naturally light, and the people managed to live on the rates. On the whole, most officers reported that the rates were fair and reasonable, though all, I think, would have felt that a fair and much needed addition had been made had the Sunday wage been given. This Sunday wage was, in my opinion, most essential, but Government did not think proper to concede it.

That the six days' wage was of itself not absolutely sufficient is clear from its having been necessary to permit exceptional treatment. Mr. Percival, the Collector of Sholapur, wrote:—

"As a whole, I think the civil rates, modified by grants of extra allowance to nursing mothers, and with a little straining the point as to when boys and girls should be counted as men and women, and with payment as charity through the village officers to work-people temporarily unfit for work through illness, have proved quite sufficient to keep the people alive and in health, though not to fully satisfy their appetite, or to keep their strength up to its normal point in an ordinary year."

Mr. Norman, the Collector of Poona, wrote:

"It seems to be the general impression, in which I concur, that Civil agency rates have proved sufficient for the maintenance of the old and infirm and such persons as are incapable of performing a fair day's work.

"3. On the other hand, it must be remembered that the orders of Government under which special allowances could be granted to all persons in need of such assistance have been freely made use of."

My own opinion is that the rates were sufficient to keep people alive, but not more than that.

Mr. Robertson.—There is no alteration that I would propose to improve on the famine policy adopted in Bombay as modified and gradually improved by the end of the famine; and I would recommend adopting that policy unaltered, with the exception that I would give the Sunday wage, or seven days' wages in the week, on both classes of works. I quite admit that the people did pick up and improved in condition on the works, but they had a day's starvation every week. There were cases of deterioration; but these were not the general rule. I do not know of any case of people breaking down under the system of works and taking refuge in charitable relief. But all medical evidence of experts went to show that a larger amount of grain was required for seven days than that which the people could buy on the six days' wage. On the other hand, the Sanitary Commissioner certainly admitted that the wage kept the people in sufficiently good condition. The people on Civil Agency works, however, did not improve, at least not much. They were such a poor class, and so emaciated that it was difficult to say whether they did improve or not. I have no doubt at all that, on these works at least, to have given the Sunday wage would have been a vast improvement, and have materially hastened their recovery. To have done this would have perhaps tempted people off Public Works to Civil Agency works; but strict supervision would at once send them back again. I think, too, that granting the Sunday wage would lessen the charges for charitable relief; strong healthy people would be able to help weaker members of their family, instead of sending those members to relief-houses, and thus families would not be broken up.

Mr. Bosanquet.—I may preface my remarks on the wage test by saying, with all respect, that I consider it to be objectionable in every way, and altogether wrong in principle. If people are ready to work as they ought to do, why not pay them fairly? The wages allowed, as is well known, on the famine works throughout the Bombay Presidency were as follows:—

On Public Works.

Men	1 anna	+ 1 lb. of grain	G. R. No. 268 C. W. 1038, of 13th December 1876.
Women	½ „	+ 1 „	
Children	½ „	+ ½ „	

On Civil Agency Works.

Men	½ anna	+ lb. 1 of grain	G.R. No. 33 E. 103, of 19th Jan. 1877.
Women	¼ „	+ 1 „	
Children	½ „	+ ½ „	

Children of people on the works under 7 years of age were paid ¼ of an anna daily under G. R. No. 312 C. W. 1116, of 26th December 1876.

I have no hesitation in saying that these allowances were entirely insufficient, and that to their introduction is to be attributed the greater part of the mortality which occurred.

The amount of food which is necessary to sustain life in a healthy condition is not an abstract question which can be decided off-hand for every individual. The question to be considered is what a person has been hitherto accustomed to. If a man has lived for years on, say, eight "breads" or chapatis daily, and you suddenly reduce him to four and keep him on that for months, you must reduce his physical condition to a very injurious extent and put his life in imminent danger. Soon after the famine closed, the allowance for each man in the jail was reduced as follows as an experimental measure:—

	Old rate.			Experimental rate.		
	lb.	oz.	dr.	lb.	oz.	dr.
Jowari flour	1	8	0	1	4	0
Toor dal	0	5	0	0	3	0
Vegetable	0	8	0	0	6	0
Salt	0	0	6	0	0	6
Oil	0	1	0	0	0	4
Fuel	1	0	0	1	0	0

In a very short time it was found that the prisoners became reduced in weight, and it became necessary to raise* the allowance to the old rates. Now if persons having all the advantages prisoners have could not live on the reduced scale just mentioned, how could it be expected that famine labourers could live on much lower rates, no wages being paid for the Sunday?

Even, however, supposing it was possible for the distressed persons to support life on the allowance permitted to them, this very low rate was objectionable, for the reason that many persons would not accept work upon it. They said, "better starve at "once and end our misery, than go for months in a "starving condition." The consequence was that many people able to work persistently refused it. When much reduced by want they had to be received gratis into the relief-houses for a time, and when better had to be turned out again, only to be re-admitted again soon afterwards. Of course the privations which such people suffered, no doubt a great deal from their own contumacy, produced in time a very injurious effect on their constitutions, and in many cases led to fatal results. I cannot, however, but regard it as something very like cruelty to expect people to work through a great part of the day and under an Indian May sun on a diet obviously quite insufficient. I may observe that, considering the appetites that growing children have, the allowance for those under seven as above mentioned was certainly inadequate. As Civil agency works were discontinued in this

---

* See note, page 147.

district at a comparatively early period,* and as I did not have much opportunity for observing the physical condition of the labourers, I have little to say about their external appearance. They did not give me, as far as I can remember, the appearance of persons in a starving condition; but it must be borne in mind that external appearance of a person is scarcely a safe guide to go by in determining whether he is in danger of dying from starvation or not.

It is asked, "what have you ascertained as to the "actual kind and quantity of food purchased by "labourers with their wage?" This question can be better answered by others; but I believe that sometimes labourers with a desire of saving, and also with the object of assisting their infirm relations, lived a good deal on leaves and roots. The price of the standard kind of food was ascertained by the mamledars by inquiry in the local markets. My answer to the last sentence of paragraph 6 is, with all respect, that I believe for the reasons above explained the "wage test" as adopted in the last famine to be objectionable from every point of view, whether of justice, of humanity, or of good policy.

[*Note.*—As Mr. Bosanquet's opinions are at variance on some important points with those of most other officers, I thought it necessary to ascertain from him how far they are based on personal observation. I print below an explanatory memorandum which he has given to me. I have also had an opportunity of questioning him personally, and give below the substance of what he stated to me, from a note which I made at the time, which I read to him and in which he concurred.

Mr. Bosanquet said that the only large work he visited was the Gokak Canal, which he visited once, in April or May 1877. He did not on that occasion make any special observations of the labourers. He went there one morning and walked round. The people looked all right. He did not adopt any measures to examine the people; did not call them up for inspection. He did not observe any persons on the P. W. wage to show signs of famine, but concluded the wage was insufficient from knowing that a man cannot live on two breads a day. Did not bring the insufficiency of the wage to the notice of Government, because it was the subject of much public discussion by high officials. Began to hold his views more strongly when he saw the people dying. Did not take any case of a man who was dying in a relief-house and trace his history back to the cause of his becoming emaciated or sick. Is not prepared to state as within his own knowledge that the large increase of people on charitable relief in September and October consisted of people who had come off public works. J. B. P.]

* I must note here that though works under Civil agency were discontinued in this district at an early period of the famine, payment at Civil agency rates was still given by the Public Works Department to labourers on works being carried on under their supervision who under Government orders were not entitled to the higher rate.

Mr. BOSANQUET'S MEMORANDUM, dated October 8th.
NOTE UPON THE WAGE TEST.

I have already, in my letter No. 2488 of the 19th September, stated some of my reasons for believing the wages which were allowed to have been inadequate. In paragraph 13 of that letter I have stated that so far as I had opportunities of seeing the labourers personally I did not observe them to have suffered in physical condition; but I have also remarked that I do not think a man's condition can properly be determined by his appearance only. I reserved my arguments on the subject founded on the diminution of the population till reporting on paragraph 25 of Chapter I. I have also yet to remark on another point connected with statistics, viz., the great increase of persons receiving gratuitous relief as the famine advanced in proportion to those on works.

Before, however, coming to these points of the subject, I would wish to amplify what I have said about the danger of reducing a man's daily allowance of food, by stating what I understood to be the quantity of food usually consumed by the cultivators at Belgaum.

DAILY QUANTITY CONSUMED BY THE WELL-TO-DO CLASSES.

Morning meal.

2 breads of jowari, weighing 1 lb.
2 oz. dal.
4 oz. rice.
2 oz. vegetables.
½ oz. condiments.

Evening meal.

8 oz. jowari.
2 oz. dal.
4 oz. rice.
2 oz. vegetables.
½ oz. condiments, salt, &c.

DAILY QUANTITY CONSUMED BY LOWER CLASSES OF CULTIVATOR.

Morning meal.

2 breads, weighing 1 lb.
2 oz. dal.
½ oz. condiments, salt, &c.
Ambil (a kind of gruel made from ragi).

Evening meal.

Same quantity.

Firewood is not alluded to above. The famine rations therefore were a considerable reduction even for the lower classes of cultivators, to say nothing of those who were better off, especially when nothing was allowed for Sunday.

I will now make remarks in regard to the diminution of the population. The following statement shows approximately what this diminution has been:—

Talukas.	Population according to Census of 1872.	On 31st July 1876.	On 31st July 1877.	Difference between columns 1 and 3.
				Less.
Belgaum - -	1,34,621	1,32,422	1,29,291	3,131
Bidi - - -	78,875	80,078	78,006	2,072
Chikori - - -	2,48,685	2,42,422	2,34,175	8,247
Sampgaon - - -	1,31,504	1,31,879	1,25,804	6,075
Parasgad - - -	1,20,691	1,16,658	97,362	19,296
Gokak - - -	1,09,697	1,10,796	94,137	16,659
Athni - - -	1,14,677	1,13,797	99,554	14,243
	9,38,750	9,28,052	8,58,329	69,723

The figures for five talukas out of seven are for 31st July 1877, or before the famine had reached its height. It shows therefore a death rate of only about 7 per cent. on the figures for 1876. As the great mortality did not occur till August and September, I think that it may fairly be presumed that 9 per cent. of the population succumbed to the famine. In Sampgaon, which suffered less from the famine than any other taluka, the figures for 1872 and January 1878 show a loss of nearly 5 per cent., while in Athni, which was the most severely afflicted of all, the same figures show a loss of nearly 12½ per cent. I think this is a large mortality. The question is if it was unavoidable,—in other words, if by somewhat more liberal expenditure in some branch of the famine relief arrangements it might not have been lessened. I am aware that in a Government Resolution on the famine census it has been suggested that a part of the loss of population may be due to emigration; but knowing the attachment people of the cultivating classes have to their homes, I fear that if we had the means for ascertaining the real facts we should find the loss owing to emigration to be very small indeed. The census of 1881 ought to throw some light on this subject.

I will now go on to the consideration of the weekly summaries published by Government in connection with this subject.

The following figures are taken from these summaries:—

Statement Week ending	Population of Belgaum District.	Affected of Belgaum District.	No. of People on Works.	Average No. of Persons gratuitously relieved.
26th January 1877 - -	9,38,750	5,01,000	29,049	345
23rd February „ - -	—	—	18,000	508
30th March „ - -	—	—	25,000	685
27th April „ - -	—	—	29,000	2,253
25th May „ - -	-	—	45,000	6,782
28th June „ - -	—	—	25,249	8,153
26th July „ - -	—	—	22,097	6,070
30th August „ - -	—	—	26,059	5,832
29th September „ -	—	—	22,444	*10,645
27th October „ - -	—	—	6,580	13,184
24th November „ -	-	-	696	3,631
22nd December „ -	—	—	—	56

* Collector's return incomplete.

It will be seen that at the beginning of the famine the people, while not very ready to ask for gratuitous relief, flocked to the works. It is probable that in some of the first returns persons fed in relief houses or private charity were not included; but private charity became exhausted about the month of May. It would have been expected, however, that after that the ratio of persons employed on relief works and those receiving gratuitous Government relief would have remained about the same, but it will be observed how greatly in the latter days of the famine, the ratio of persons on gratuitous relief increased in proportion to to that of those on the works. Where, I would ask, did the extra number come from? I fear the conclusion is but too obvious, that many of them were persons who had originally been on the works, and who, whether from unwillingness to work on the ration allowed or on the insufficiency of the ration, had afterwards become so reduced as to require gratuitous relief. It is fair to state that the numbers on gratuitous relief were much increased in the taluka of Athni after the visit of the Sanitary Commissioner Dr. Hewlett, on whose recommendation it was thought right to make provision for many children who appeared to be neglected by their parents. But I would observe that it appears to me to be more than probable that these special measures on behalf of these children would not have been required to the same extent had the wages on relief works been somewhat more liberal.

A note of the allowance given in the Municipal relief-house at Belgaum from June or July to October may not be considered out of place.

Men on works.

5 breads weighing 2 lbs., dal 4 oz., 2 lbs. of ambil, ½ lb. jowari.

Women on works.

4 breads weighing 1 lb. 10 oz., dal 4 oz., ambil ½ lb.

Men unable to work.

3 breads weighing 1 lb. 3 oz., dal 4 oz., ambil ½ lb.

Women unable to work.

2½ breads weighing 1 lb., dal 4 oz., ambil ½ lb.

Nursing mothers.

5 breads weighing 2 lbs., dal 4 oz., ambil ½ lb.

Children under 10.

1½ bread weighing 9½ oz., 2 oz. dal, and ¼ lb. ambil.

I believe that though the average number of persons provided for daily at one time exceeded 300, yet during the four months or so this relief-house existed, from about the beginning of July to the end of October, only two deaths occurred, both of children, one of which died soon after its birth. I will conclude my remarks with a few general observations. The famine, as far as it affected the people, did not reach its intensity till August and September. Considering the number of deaths that occurred and the fact that the famine may have been considered almost over by the end of October, the question naturally arises, what the mortality would have been if the famine had lasted another year. My own impression is that if some considerable relaxation of the rules regarding labourers had not been ordered, nearly all the labouring population would have died. By my use of the words "utterly inadequate," in my letter No. 2488 of the 19th September, it may be inferred that I think that the wage should have been very much increased. I think that it might with great advantage have been increased by one-half. This would have involved a considerable increase of expenditure, but one, I think, incommensurate with the relief which it would have afforded. I believe also that in the long run Government would not have lost as much by such increase as might at first sight appear, as I think it may be fairly affirmed that with an increased ration more work would have been obtained from the recipients of it. It would also have tended to keep in check the increase on gratuitous relief. It is, too, quite possible that the effect on the collection of the Government land revenue might have been favourable.

I may be allowed to observe that personal experience must have considerable weight in influencing the judgment. I think that any person who tries to

modify his diet to any great extent, either by the reduction of quantity or by alteration of quality, will find himself a sufferer. Let any man who has hitherto made animal food a portion of his diet, give it up altogether, he will soon find it necessary to take to it again. I have made experiments in my own case in regard to diet, and I am afraid with some disadvantage. If anyone, therefore, after reading my remarks should feel a difficulty in concurring with my conclusions, let him personally try the effect of reducing his diet by exactly one-half, not more, and of persevering in this course for six months or a year, and I am assured he will find that his views become very considerably modified. I may be allowed to take this opportunity, the last I perhaps shall ever have, of stating my regret that it should never have occurred to me during the course of the famine to suggest that, after the practice usual in jails, the relief labourers should have been occasionally weighed. This would have given a very correct idea of their physical condition from time to time, except in cases where they had other means of relief, as from charity of Saukars and others. Whatever conclusion the Committee may form from the facts I have stated in support of the opinions I have formed, the question of the diet required for relief labourers should, on the occurrence of another famine, be soon set at rest by this practical mode of testing it.

Lieut. de Villamil.—The wage for a man should be, in my opinion, the price of 2 lbs. of the grain procurable locally, paid six days a week, and at the price ruling in the nearest large village within a radius of three or four miles, not the rate at the head-quarters town as is generally paid. Coolies cannot go to the head-quarters to procure food.

The 1 lb. of grain + one anna is an irrational and unequal way of paying; no cooly pays 6 annas per week for condiments, nor can he live on 6 lbs. of grain per week when he is doing work.

Let me give an example of the unfairness:—In Sholapore, in February 1877, grain was selling at six or seven pies per pound, and consequently a man was paid the price of 17 or 18 lbs. per week (at 1 lb. + 1 anna per day for six days of the week). In Kaladgi (Badami taluka), in July 1877, grain was selling at 2 annas per pound, so a man was being paid the price of 9 lbs. of grain per week only. Either the former was too much (*i.e.*, more than absolutely necessary) or the latter was too little; the latter was *less than the scale of food in the relief houses* and was subsequently increased by one-sixth for Sundays.

As I was one of the officers mainly instrumental in getting the increase, I must confess that the 10½ lbs. per week was *enough*, but I think it was "sailing a little too close to the wind" to be safe. I would prefer 12 lbs. per week for the wage; this would give 1½ lbs. of grain for seven days a week, and a small margin for condiments. The scale should therefore be:—

Man,	price of	2	lbs.	grain.
Woman,	,,	1½	,,	,,
Child,	,,	1	,,	,,
Infant (fed),	,,	10	ozs.	,,

The infant to be fed up to the value of 10 ozs. of grain for seven days per week.

This amount of pay, if given *regularly every three days* will be found quite ample for supporting life and enabling a cooly to do a fair day's work, but it is of the *utmost importance* that payments should be *regular* and *frequent*, or no reliance can be placed on *any* rates of pay, which are reasonable, being sufficient.

I have seen coolies keep in good health and improve on 10½ lbs. of grain per week when it was paid regularly every three days, and I have seen the same people reduced in physique when the payments were *weekly and one week in arrears;* in the latter case it is possible the people had a certain per-centage mulcted, but I cannot say for certain.

The Rev. C. Harding.—I don't think the wages should have been so low as they were, both the Civil Agency and the Public Works Department rates. I formed this opinion from seeing the condition of people after they came off the works, not while on them. Natives told me that when they went to Public Works Department relief works (not Civil Agency works) they had to wait till pay day came round, so had to borrow and continued in debt all the time they were there. They often had to buy fuel and to pay something for use of a mill to grind. If their work fell short, they were cut accordingly, and were often fined in consequence of temporary absence through sickness. The plan was to pay every week, but this takes a deal of time, and sometimes, especially in Kaladgi, they went two weeks and even three without being paid. I heard this asserted by many people, but not till after I had been to the district and the works had been closed. I thought the bulk of the people on the works were at the end of their resources, and must die if not supported by the State. In Kaladgi when I visited the villages I was frequently told that people had died on the relief works or had gone to the poor-house and died. In Sholapur during 1877 many of the villages were almost deserted. I have seen a village of 100 houses with only five houses inhabited. Those who remained were the richer people.

I don't feel competent to say what the relief wage should be. In a village dole I think 1½ lbs. for a man and 1 lb. for a woman enough. I asked a man and two women who had left the Ashti tank how much they had received and what grain they could purchase during the last week on the work; it amounted to 1½ lbs. apiece.

Mr. Candy.—I was in civil charge of the relief work on the Dhond-Manmar Railway. From February 1877 I watched the condition of the people, heard their complaints, and brought what was necessary to the notice of Mr. Izat, Chief Engineer. When I first went to Dhond in February, I found about 500 people who had heard the railway was to commence; they were in good condition and came from the neighbouring parts of Nagar and Poona districts. Many had left a road under ordinary Public Works Department supervision to come to the railway, thinking the rates would be better. Most of these were professional labourers, who usually get employment under the Public Works Department. I formed them into gangs and took a list of their names. Other people, including many cultivators, soon began to come; and then I got the order that no one was to work within ten miles of his home; so I sent them on to the gang next beyond, about 25 miles off. Soon after another party was opened between those two points; so that about the middle of March there were three parties at work on 25 miles of railway. There was an engineer with a staff of subordinates over each camp. We got the people hutted as soon as possible, mostly under a blanket stretched on sticks; we also got Marwaris to open grain shops at the camps, and there was some difficulty about this; once the chief shopkeeper at the camp on the Bhima died of cholera, and all the rest bolted and had to be encouraged to come back. Other people began soon to straggle on to the work in a quite exhausted state, and for these I opened a relief kitchen on the banks of the Bhima in March. It was an open place; the people were fed morning and evening, and the engineer sent to it all who were too weak to work. Similar relief kitchens were opened in connection with the other two parties. New-comers also who came on weak and exhausted were fed here before they were sent to work On the 25th March Sir R. Temple came and inspected the gang, about 2,000, on both sides of the Bhima, and picked out the weakly; up to this time the railway engineer officers were receiving all and treating them all as able-bodied; they had no weaker class of workmen, but sent to me the halt, blind, &c., who were unable to do any work. At this time, and in consequence as I think of the heavy task and the absence of any distinction between those who were able-bodied and those who had ceased to be so, a kind of choleraic diarrhœa broke out, of which many died. Mr. H. Vacher, the executive

engineer at Dhond, then gave advances all round to enable the people to buy grain. This stopped the diarrhœa, which was due I think to their not having enough to eat. The people had been cut down to a rate below the prescribed wage, because the gangs comprising a number of people not able-bodied could not do a full task. Wages at this time were paid weekly on Sundays for six days. Very little fire-wood could be got for the picking up, and it was very expensive; so they bought parched gram instead of their usual food. There was little or no sickness at Dhond during April and May. Once about the 18th of May violent rain fell. I heard many of the people were in distress, so I issued gratis, as an extraordinary measure, large quantities of grain. The people remained well and quiet.

In my opinion the people worked well and quickly up to June. The causes were: many supplemented the Government wage by private supplies of grain got from their villages; they also sold to the grain merchants their ornaments, utensils, millstones, and even the Government tools. When these means failed, the condition of the people deteriorated.

The reluctance of the people to work also arose partly from want of spirit and hope, especially when the rains threatened to fail. In July and August piece-work was introduced—the people formed their own parties, worked when they liked, and were paid oftener. Before the people were often paid only after a fortnight, and had to borrow from the Bania, who was repaid with interest when pay day came. Also the wage was fixed with reference to prices at Nagar, while grain could not be got at that price on the works. I think that once the difference was so great that prices were 24 lbs. at Nagar, and 12 lbs. at Loni. In that case I laid in a store of grain at Loni and threatened to open it, if they did not charge a fair price, and they gave in and I never had to sell it. My experience is in favour of piece-work for able-bodied people. Under task work with muster rolls there was much fraud; false names were often entered. In a gang of fifty some four or five would be dummies. The work was short, and all were cut in consequence, the mustering clerk drawing the pay of the dummies; also the real labourers had to pay a douceur to the clerk. Piece-work requires that people should know each other, and would not be done by people brought together from anywhere, unconnected with each other; it would not be safe unless there were a task work gang to fall back on for the weak labourers, a relief kitchen for incapables, and a hospital for the sick. If the work is given to large contractors, there is no security that the people will be paid at all, and I would not have them on any consideration.

Mr. Fforde.—At first I had charge of the general famine relief measures in four western talukas, and continued in charge nearly to the middle of the rains. I had under me a number of road works. My experience of the Civil Agency wage, 1 lb. + ½ anna, was that it is sufficient for a man who begins in fairly good condition, and on it he can perform 50 per cent. of an ordinary task. If he comes to work in bad condition he must have more food, and must be specially treated, or he will not pick up. People who came on in good condition throve on it; some able-bodied came and offered to work at a less wage, 9 pie, rather than the full wage on the Public Works. They belonged to a village close by, and the Public Works Department work was about 12 miles off: my instructions were to send all able-bodied people to Public Works and not to receive them on Civil Agency works. I met them afterwards on their way to the Public Works, and I afterwards heard they went to look at it, and refused to work there when they found a full task was exacted. The general result of turning people off the Civil Agency work was that they went and lived at home. On the Civil Agency works at Rahuri there were people who had silver ornaments on, and whose children had silver ornaments, and who lived in the villages close by: they were turned off, but refused to go to Public Works. Towards the end of the famine people turned off Civil Agency works would go to Public Works Department works because they were pinched. There were a great many on the works who were not in need, and who would not have come but for knowing that they would not be heavily tasked. When we were absent the overseers took on persons in good condition; when we visited the works we turned them off and told them to go to Public Works. I think there should be no Civil Agency works at all; all works should be under Public Works Department, but there should be a Civil relief officer to superintend the relief part of it. The amount of work done on Civil Agency works was only 15 to 20 per cent. of a full task. We had only one class of labourer. Those able to move about, but who could do no work, were sent to the relief kitchens, where they got 1 lb. of cooked food; this was quite enough.

I had a set of children at Indapur after the famine on whom I tried experiments of food.

I gave 5⅓ ounces bread and 4 ounces porridge; that is, 1 ounce of dal, in three meals, to children from 7 to 12; 9 ounces porridge and 1 of dal to children from 4 to 6. In both cases the children increased 4 lbs. per head in a week; but they went down again afterwards when kept on this food without change. The above is the weight of the uncooked flour of which the chupattis, porridge, and dal were composed.

If the Civil Agency works people were put under the Public Works Department, and worked as hard as was good for them, I think they should get the full rate paid on Public Works Department works. It would be as economical to feed these people at home, considering what the value of the work they do is; but then there would be a great rush on this kind of relief.

I think the responsibility of taking care of the infirm should be more thrown on the patel than has been done.

The general complaint of all on the works, strong and weak alike, was insufficiency of the wage. Towards August 1877 I thought the people were getting weaker and thinner on the railway works. As a rule they did not complain till they were asked. As the works went on, people who were completely destitute would often go home for a time and then return to work, often returning to Civil Agency works for a time, and then being sent to Public Works.

Another source of loss was the exchange on copper, the glut of which was such that 17½ annas in copper were worth 1 rupee, and the small purchasers lost proportionately on each transaction; also, in every bazaar there were false weights and measures. I caught several of these and got the owners punished. The people had to pay bribes to the mokaddam and the karkun, &c. I don't think many of the actual land-holding khatadars came on the works, though some members of the family did; they got advances from the Bunnias and had property of their own.

The Rev. S. B. Fairbank.—The people dislike to go to Public Works now more than in the famine, because it is all contract work now, and the contractors are harder upon them. They only go to contract work as a last resource. The people we sent to the railway in the last half of 1877 frequently came back exhausted in a few weeks, and had to be put in our relief camps. The people came from villages round, and we sent them to the Public Works. We made three classes. One, the strong, we sent to the railway, another to the municipal works near the city. There were 800 or 900 there; they got bread or grain, and had to work; 22 ounces of bread and a little vegetable and condiments. Those in the city afterwards got 14 ounces and did no work. They were too utterly impotent. A third class were fed. More than 100 died in our relief camp. What the people got on the railway was enough if they had got paid daily, but they got it once in three days, or once in six, and this put them into the Sahukar's book. They did get paid once a week; much pains were taken to do this by the gentlemen in charge.

The work was contract work, 100 cubic feet for 4 annas. A man and his wife in good condition can do this in a day. But these people could not do it, and did not. They left the work and came away to the relief camp ready to die. Some certainly were lazy, but we kept a sharp look-out for malingerers.

The difficulty was to make the people who supervised the labourers honest. In the worst of the distress the karkuns and maistries would make something out of the people.

More money was wasted on small works than on large. With a view to the interest of the people the railroad works would be better than small tanks.

Mr. Clerke.—I had no opportunity of ascertaining what the people actually bought with their wages. But I know that some were found to have accumulated a few rupees, and the shops opened on the works sold not mere necessaries, but also luxuries, such as sugar, tobacco, &c., and even glass beads and bangles. I did not come across cases of people who were forced to sell their pots and clothes in order to live, the wage not being sufficient. In some cases working people had old and feeble relations living with them in their huts. We used to give them charitable relief ourselves, but for the most part such people went to the relief-houses kept by civil officers at the taluka towns. On two occasions I mustered all the people on my works, the Mutha Canal and the Matoba, Patas, and Sirsophal tanks, and counted the number of ryots. Out of 26,000 working people, men, women, and children, in March 1877, 16,700 said they were cultivating ryots; to some extent their statements were tested by the patels who were present. Towards the end of April again, out of 31,600 people 20,092 were cultivating ryots. Mr. Joyner, who was on the Mutha Canal under me, and had about half of the labourers, was satisfied that their statement was true. He speaks the language well and knows a great deal of the people, and is not likely to have been much deceived. These figures were reported by me officially to the Famine Department, and similar returns were sent in by all the famine works, I believe, in all districts. In the same return was shown the districts where the people came from, and there were not many wanderers on my works from distant districts.

Mr. Wingate.—When dealing with thousands it is no test of a wage to find here and there somebody weak and ill. At first I made many inquiries, and I satisfied myself there were reasons why these cases should occur; after that I simply set aside the exception for exceptional treatment; but to the last I could turn out the Department Public Works gangs and feel they were as strong and cheery-looking as in a time of great trouble one would expect to find the population. Whatever a wage may be in theory, in practice I know that I can support hundreds of thousands on the value of a pound *plus* an anna; that a large majority will save on that wage; and that with graduated tasks, proper hospital arrangements, and a nursery for the children of those parents who are selfish or careless, I should fear the results of no inspection. I say so after handling, questioning, and examining very anxiously large numbers, and the same people over and over again, during some five or six months of the worst of the famine in the worst part of our worst district. I go further and say, what I thought during the famine, that I could turn the whole Department Public Works people over to a Civil Agency wage, and pick out for the Department Public Works wage the few thousands who would require it; but I would not perhaps recommend this, unless I had a very strong staff of village relief officers. But I think the wage might with advantage have been reduced in the less affected tracts, and this would have covered any liberal increase thought advisable in severely distressed quarters during the rains, when grain was very scarce. But whether the wage could have been here and there judiciously reduced or not, it was not the people on the works who gave trouble and anxiety, but the people off the works. Once I had got people to the works, and secured their staying there, my experience was that I might cease to be anxious on their account. But anybody who knows anything about real famine would not expect a mere money wage to be sufficient in every case, and would not be surprised or abuse the wage, because he had to look after the children, and growing boys, and sick cases, and bazaars, and frequent payments, and make advances to a large family, and so on. An economical wage is only to be made a safe wage by such watchfulness. I thought the concession of the Sunday wage to the Department Public Works labourers unnecessary, and I care nothing for calculations so long as the gangs maintained their physique; for the Civil Agency people it was necessary, no doubt, but as I could put all my weakly people on Department Public Works wage with no tasks, and specially care for them, practically the concession was not even in their case required. The mortality was due to causes apart from the wage given; people were marked for death before Government dealt with them.

MADRAS.

Mr. Longley.—It has been assumed by some, though in my opinion (confirmed by experience) fallaciously, that the price of 1 lb. of grain is sufficient to maintain an adult laborer in health, allowing a few pies for condiments, and the following scale was allowed in G.O., No. 329, dated 31st January 1877:—

(1.) On works on which taskwork not less than 25 per cent. below ordinary task is enforced—

For a man the value of 1 lb. of grain + 1 anna for condiments.
" woman " 1 lb. " + ½ "
" boy or girl " ¼ lb. " + ½ "

(2.) On works on which taskwork not less than 50 per cent below ordinary taskwork is enforced—

For a man the value of 1 lb. of grain + ½ anna for condiments.
" woman " 1 lb. " + ¼ "
" boy or girl " ½ lb. " + ¼ "

The effect of the above wages was carefully watched, and in G.O., No. 1088, dated 15th March 1877, it was deemed insufficient to maintain the people in condition. Accordingly a relaxation was allowed in the case of persons whose appearance indicated physical deterioration.

In G.O., No. 1788, dated 22nd May 1877, the wages in both the above classes of works were assimilated. In G.O., dated 24th September 1877, No. 2847, the following scale was adopted:—

(1.) Upon Professional Agency works (corresponding with Class I. of G.O., dated 31st January 1877)—

For a man the value of 1 lb. of grain + 1 anna 6 pies.
" woman " 1 lb. " + 1 anna.
" child of seven years and upwards the value of ½ lb. + 9 pies.

(2.) Upon Civil Agency works (corresponding with Class II. of G.O., dated 31st January 1877)—

For a man the value of 1 lb. of grain + 1 anna.
" woman " 1 lb. " + 9 pies.
" child " ½ lb. " + 6 pies.

The wages sanctioned in G.O., dated 31st January 1877, were being paid on Sundays, though no work was exacted on those days; but, as the scale prescribed in G.O., dated 24th September, included the pay for Sundays also, no payment has since been made on those days. Assuming the price of 1 lb. of grain to be 1 anna, the following statement compares this scale

as distributed on all the seven days of the week with that sanctioned in G O, dated 31st January 1877—

Description.	G O, No. 2847, 24th Sept. 1877. A.	P.	G.O., No 329, 31st Jan. 1877. A.	P.
Class I, Works—				
For a man - -	2	$1\frac{5}{7}$	2	0
„ woman - -	1	$8\frac{4}{7}$	1	6
„ child - -	1	$0\frac{6}{7}$	1	0
Class II, Works—				
For a man - -	1	$8\frac{4}{7}$	1	6
„ woman - -	1	6	1	3
„ child - -	0	$10\frac{2}{7}$	0	9

Early in 1877 I visited the relief laborers, some 3,000, engaged in dismantling the fort walls at Dharmapuri. The work was comparatively light and adapted for women and children. It was prosecuted on the daily wage system. The rates of wage averaged—

For men - - 2 annas.
„ women - - 1 anna and 6 pies.
„ children- - 1 anna.

Wage was given on Sundays, but work not demanded; the non-working children of *employés* were fed at kitchens on the work. The average price of rice was 1 anna and 2 pies per lb.; deducting 3 pies and 2 pies respectively for condiments from adult and children's wages, men could procure $1\frac{1}{2}$ lb., women 1lb. and 1 oz., and children 11 oz. of grain. On this wage the men were in best condition, but the women and children were all below par. A number of these gangs were inspected by Dr. Macdonald (Bengal Medical Establishment), doing duty as sanitary officer in the Salem District, and he wrote thus on the 9th May 1877:—

"The women, lads, and girls were under-fed. Even those who received some aid from friends were in bad condition."

The labourers purchased with their wage the best food procurable, and as much of it as they could get for their money; the very confirmed betel and tobacco consumers sacrificed a modicum of food to gratify what to them was almost a necessity in the shape of the betel or tobacco

The cheaper kind of food is taken as the standard: once in every fortnight tahsildars ascertain the ruling price in the bazaars of their head-quarters and communicate the same to the Public Works Department officers.

The wages should be regulated as follows:—

For 25 per cent. of the ordinary outturn—

	Food-grain. oz.		Money-payment for condiments. pies.
For a man - -	20	+	8
„ woman - -	20	+	8
„ child - -	12	+	3
For 50 per cent. of the ordinary outturn—			
For a man -	24	+	8
„ woman -	24	+	8
„ child -	16	+	3
For 75 per cent. of the ordinary outturn—			
For a man -	30	+	8
„ woman -	24	+	8
„ child -	16	+	4

I believe, if these rates are curtailed, the physical condition of laborers will sensibly deteriorate.

Mr. Price.—Many years before the famine occurred I had given some attention to the habits of the laboring classes in the adjacent district of North Arcot and in a taluk (Wallajah) bordering on this district. I made inquiries of many persons regarding the quantity of food eaten by the working classes. I then learned that the regular allowance which a really hard-working and healthy male adult cooly could dispose of in a day was one local measure of *raw* rice (120 tolahs) = 3 lbs. In Salem pretty nearly the same calculation was made, the "mánam" there being, as well as I can remember, just about half a Madras measure. The quantity was two mánams of rice per diem and a little less in the case of dry grain. The quantity mentioned may look rather large, but it is to be remembered that the man gets nothing with his rice or dry grain excepting a little pepper-water and salt, or a chutney made of tamarind, a brinjal or two, and pepper.

The regular wage in harvest time, when men have to work hard, is 2 annas and a measure of grain, or else 2 annas and one or two meals, according to the master's power of bargaining. People who are not so heavily worked of course do not eat the quantity mentioned. In Bellary, where I was a divisional officer, at the commencement of the famine we gave, I believe, a Bellary measure, which to the best of my recollection is $2\frac{1}{4}$ lbs. to a male adult, half a measure to a female and child over twelve, and quarter for each child. I think, too, that there was a money payment also of 6, 4, and 2 pies for condiments, but cannot be sure. When the one-pound ration was introduced prices had risen and the six-pie allowance was probably not more than enough. I have seen the effect of the payment of the price of one pound of grain and 6 pies on a very large number of laborers. My experience is that they slowly but steadily declined in condition, that the slightest scratch produced ulceration, and that if taken ill it was a serious matter with them. When we paid in the price of a pound of rice and the people could procure dry grains at a cheaper rate, they managed to get on, but where the rule was strictly enforced, and the price of the cheapest grain ordinarily consumed by the laboring classes was paid, the effect was marked and unfavorable.

I am altogether opposed to a wage test, but if it is desired to employ it, there are two modes by which to fix it.

1st.—To definitely settle, as it is to be presumed that medical men can, what is the quantity of food which will enable an adult male and female and a child not only to *exist* but *to do a fair day's work.* The other mode would be to dispense with doctors' opinions altogether, to assume that a full grown cooly, as is pretty nearly the case, spends three-fourths of his daily earnings, where such earnings are entirely in money, upon food, to ascertain what amount of the kind used by the laboring classes is purchaseable with these three-fourths in an ordinary season, and to base the famine wage upon this. The principle is in either case the same, the difference being that results are in one case arrived at by scientific and in the other by unscientific means. I do not consider it safe to attempt any other principle. It is, in my humble opinion, which is formed upon some experience, a false economy to give on relief works a wage calculated only to support life.

Mr. Weekes.—It has been assumed during the Madras Famine—

(1) that the price of 1 lb. grain + 1 anna was sufficient for a man, the same less 6 pies for a woman, and the value of $\frac{1}{2}$ lb. + 6 pies for a child, if the task were 50 per cent. of ordinary rates;

(2) that the above rate should be reduced 6 pies for men and 3 pies for women and children; and,

(3) that the first rate was sufficient for those doing 50 per cent. of an ordinary day's work, and that for those doing 75 per cent. of an ordinary day's work the money addition for a man should be increased to $1\frac{1}{2}$ annas, for a woman to 1 anna, and for a child to 6 pies.

My impression is that for famine and mere subsistence allowance rates Nos. I and III are somewhat excessive in the condiments allowance.

I cannot believe it is necessary to eat so much of chillies, tamarind, ghee, curry-powder, onions, garlic, meat, besides dholl and vegetables, as are recommended as necessary for people in relief-camps even (*vide* G.O., No. 1648, of 5th May), and I conclude the medical officers would recommend more as necessary for working laborers. Some laborers that, to my know-

ledge, did *over ordinary* * rates of work on rate No. II did certainly, some of them I say, look too thin; but they were, I think, rather over-worked and this told on the weaker of them; but I should hesitate to say rate No. II was evidently insufficient. To my mind the unwillingness of the people to go to Nellore was responsible for much of the low condition of some of the people in May.

At about the worst time of the famine in Cuddapah, say the 14th July, ragi was selling at 7·59 seers per rupee (and cholum the same in the preceding week). At this rate six pies would buy almost ½ lb. of ragi, and I should think if a man were starving on 1 lb. grain, he would prefer an additional ½ lb. of the food he is accustomed to, to half anna worth of condiments. And I should say if he spends the six pies on condiments, then the 1 lb. grain is not insufficient. If he does not spend it on condiments he gets more than a lb. of grain.

I consider the wage test must depend on the physique, antecedents and habits of the people concerned.

I would consult and compare the normal rates for labor in different parts of India; and reduce the normal rates of daily wages slightly, not much, for anything under full work, and give almost ordinary rates for labor on great works. But by normal rates I am far from meaning what the Department of Public Works give. I mean what the ordinary employers of labor give. Natives, as a rule, are paid according to their work, and they ordinarily work *comparatively few hours a* day, *and not every day in the week.* I consider it to be *against their nature for men, women, and children to work six days in every week for nine hours a day for many consecutive months.*

Mr. Oldham.—(1.) The Wage Test.—The best answer to these questions will be by the following description of an experiment:—

(2.) In Adoni in July last, I formed a gang of 300 adults of whom 180 were women. Nearly all the members of the gang were in fair condition, and none were in an emaciated state, though the condition of some was considerably below par. A special subordinate was deputed to pay and to supervise the gang. It worked under my own eye, and each member of it was instructed to bring any grievance at once personally to my notice.

(3.) The pay of each laborer in the gang was the exact buying price of one pound of cholum of the cheapest sort, *plus* one half anna. They were paid daily in the morning, on Saturday getting the wage for both Friday and Saturday, and on Monday getting paid for Sunday; but they did not work on Sunday.

(4.) The gang consisted of people of the ordinary agricultural and laboring class, and included a few Mussulmans and a few out-castes.

(5.) They came from different places, but at the time of the gang's formation, they were all living or lodging in Adoni. They began to work about two miles from there, and were employed in digging side channels and strengthening them with single blocks of stone or revetment work, and in patch repairs on a stony road. They worked by task, the task exacted being about 50 per cent. of an ordinary day's work at the Public Works Department rate, and short work or misconduct in the gang was punished by fine from the daily wage.

(6.) When their work had carried them to the 6th mile from Adoni they hutted themselves without any assistance from me among the rocks by the roadside, and continued their work on to the 10th mile, when at the end of October, they were made over to the Public Works Department. At that time their numbers had sunk to 210, but still included all the poorest members of the gang. The rest had left for the harvest then in progress, or for their homes. At the time that they were handed over, each member of the gang was in excellent condition.

(7.) The deduction is that a relief-laborer can not only keep in good condition, but can improve in condition, can give a fair outturn of work, and can also stand a distance test, on the wage which these people got, provided always that it is ensured that he gets this wage regularly and all to himself, and that the amount of grain, to buy which its rate is fixed, is procurable within his reach. In fixing the rate at this scale for large bodies of people scattered over extensive works and at great distances, both these considerations are apt to vary much; and if the former be secured, it is sometimes impossible to ensure the latter being so also.

(8.) The price of the standard kinds of food on which the wage is based is to be ascertained at the nearest market from the dealers themselves; the results of the reports on the subject being checked by the officers in person. I have not found that information on this point was defective or erroneous.

(*a.*) I would formulate the conditions of a wage test on the experience above described, enjoining particular care in adopting a sliding scale of wages to the rates at the nearest markets. In Adoni these markets were on or close to, and in many cases created by the works themselves.

Major Ross.—I think the scale laid down in the G.O., Madras Government, of the 24th September 1877, is as nearly correct as any scale could be.

I have found that emaciated persons coming into camps before all hope of their recovery was gone, by reason of impairment of the digestive organs, regained strength and flesh on the camp ration of 20 oz. of grain and condiments. I consider that the cooly receiving the Civil Agency rate of value of 1 lb. of grain and 1 anna—total 2 annas—would be in about the same position; as a rule, they do not purchase fire-wood, but pick up small sticks during the day while they are at work.

The laborers on the professional works decidedly improved physically on the wage of 2 annas and 6 pies. That sum would purchase *in the height of the famine* 1 lb. and 11 oz. of rice.

Major Ross Thompson.—The wage should vary with the amount of work turned out—should in fact be the value of the *piece* executed.

The value of the piece should again depend on the value of grain. The rate given per piece being such that it would enable a laborer to procure as much plain food as would keep him in health and leave a margin over to enable him to provide for infants, sick, or cripples of his family, and thus avoid the inevitable demoralisation consequent upon giving gratuitous relief. By working on the piece-work system a whole family may take their share in the work, the old and young, the strong and weak. Payments are immensely simplified, and the harder the people work the more do they benefit themselves.

Mr. Nordmann.—The wage test.—I consider the ("Professional Agency") wages hitherto paid, viz.,—

For a man—1 lb. of grain and 1 anna 6 pies,
For a woman—1 lb. of grain and 1 anna,
For a child—½ lb. of grain and 9 pies,

just sufficient; I have noticed people improve in condition on these wages, within a couple of months.

On the other hand, the (lower) "Civil Agency" wages, given to people who require strengthening before they can work much, viz.,—

For a man—1 lb. of grain and 1 anna,
For a woman—1 lb. of grain and 9 pies,
For a child—½ lb. of grain and 6 pies,

has been barely sufficient to keep body and soul together; and the improvement in these people's condition at this rate of payment has been, if it took place at all, scarcely perceptible. The prices of the

* The work was done below the Department of Public Works estimate, which was made on inspection and examination of the work done.

staple kinds of food are ascertained monthly from taluk tahsildars.

To remedy the insufficiency of the "Civil Agency" wage, and yet not encourage people to remain in that category, but induce them to endeavour to work hard so as to be promoted to the "Professional Agency" rate, it would perhaps be advisable to raise the grain part of both rates by say twenty per cent. But in that case, tasks ought to be more rigidly enforced than is frequently the case at present among the "Professional Agency" gangs; and no people to be admitted to these gangs except they can and will do the full task.

Mr. Rundall.—I have no data to test the accuracy or error as to the assumption made as to the quantity of food required. The people now on relief works on Civil Agency rates do not expend all their earnings, but hoard some or give to relatives who come and collect it; such people continue in low physical condition. The price of food is ascertained by the rate at which grain is sold at the weekly market at the cusbah of the taluk in which the work is situated.

Captain Maitland.—The wage test—

	Rice.	
Man - -	1½ lb.	+ nine pies to one anna for condiments,
Woman - -	1 lb.	
Boy above seven	1 lb.	

seems a fair wage for Madras for a full day's task, but I would always adopt piece-work for able-bodied paupers; it was most successfully carried out in this district, the rate depending on soil, work, &c. In Madras one anna per excavation, three pies for twenty yards lead, and two pies per yard lift for every cubic yard was given. The price of grain was ascertained weekly through the civil authorities.

Sergeant Stewart.—The wage test.—I beg to submit that this also is unsuitable, and only tends to increase the gratuitous relief of old people and children, sick and cripples; the great majority of whom would be more cheaply and better supported by the working members of their families, if these working members were themselves in receipt of proper wages, that is, the normal wages *plus* some addition as compensation for dearness of provisions. I found it so on the Kalahasti-Maderpauk new road.

Surgeon Gray.—The coolies employed on the Gooty road near Peapali, Kurnool District, were paid according to the following scale:—

CIVIL AGENCY WORKS.

	A.	P.	
Man - - -	1	9	At the period this enabled a man and woman to buy respectively three-quarters and five-eighths of a seer of rice, *i.e.*, 24 and 20 oz. The price of rice was one anna and six pies per three quarters of a seer, or two annas per seer.
Woman - -	1	6	
Child above 7 years	1	0	
Child under ,,	0	5	

PROFESSIONAL WORK.

	A.	P.	
Man - - -	2	3	At this period this enabled a man and a woman to buy respectively one seer and three-quarters of a seer.
Woman - -	1	9	
Child above 7 years	1	2	
Child under ,,	0	5	

I was not on the spot to ascertain how much grain the professional coolies really purchased; but the Civil Agency laborers generally bought from half to three-quarters of a seer. I think that the wages are ample. Most of these coolies bought rice, strange to say, though cholum was cheaper by two pies per seer. They preferred rice.

The price of the standard kind of food on which the wage is based is ascertained from the taluk tahsildar who finds out how that grain is sold in the bazaars of the principal villages.

It is my opinion that Sir R. Temple's allowance of 16 oz. of grain and half an anna is quite sufficient for Civil Agency coolies, who do scarcely any work or less than 50 per cent. The coolies working here, near Peapali, have done up about 10 per cent., and some even 0 per cent. These coolies gathered and broke stones. If the coolies are strong and are expected to dig earth, *i.e.*, do hard work, then I think that the men should be allowed a wage to enable them to buy 20 oz. of grain, and the women 16 oz, with half an anna each.

Mr. Macartney.—After giving considerable thought to the subject of wages, I had worked out a scale equivalent to one-and-a-half pounds dry grain and six pies for a man, and to one-and-a-quarter pound of grain and five pies for a woman, as being in my opinion the lowest wage which could be safely offered on Civil Agency works. But on subsequently reading G.O., No. 2847, of 24th September last, I found that the scale there laid down was exactly equivalent to the one that I had worked out. I therefore fully approve of the Government scale. It was my lot to witness the effect of the experiment of the 1 lb. grain + 6 pies per man, and 1 lb. + 3 pies per woman ration, and I regret to have to record my opinion that the result was most disastrous. A gradual process of wasting went on until a large number of laborers were unfit for work; and when, by his Grace the Governor's orders in Council, a more liberal wage was given, while a fixed amount of work was insisted on, I weeded out from my somewhat over 3,000 laborers no fewer than 850 in one day and sent them to the relief-house as the only place for which they were fitted.

Major Clarke.—The wages first offered to the famine relief coolies employed on the Buckingham Canal were based on the value of one pound of rice *plus* one anna, which was added to cover the cost of other articles of food. This sum was sufficient to meet the mere cravings of a hungry man or woman when two or three of one family could put together their little all into the common purse to meet their daily consumption, but it was not, as a rule, sufficient to develope the strength of the native pauper, nor to improve his worn-down constitution.

Quality and quantity of food purchased by the laborers with their daily wage differed widely in each locality, but I was led to believe that they were not able to buy the normal quality of rice, &c., and the laborers were, for the most part, imposed upon by the merchants or dealers. In my opinion the coolies should receive their wages every evening about 4.30 or 5 p.m., if such an arrangement can be made.

Hurry Row.—The staple food-grains of India are rice, wheat, joari, ragi, &c. I know that in wheat-eating countries, an adult requires 2 lb. weight of wheat-flour, ¼ lb. of dhal, and about ¼ anna for condiments. In rice-eating countries 3 lb. of rice and ¼ anna may be found enough.

MYSORE.

Major Moncreff.—I have no accurate data as to the quantity of food required to support human life, but in Mysore we were all satisfied I think that life could be supported on 1 lb. of grain (rice or ragi) with an allowance for the usual condiments, and that on 1¼ lb. of grain a man could do his day's work and take on flesh.

While the wage test is *based* on the price of food I think it a mistake to fix the wage lower than what usually prevails in the district. For instance, suppose a labourer can usually earn 2 annas a day and that grain usually sells for 48 lbs. to the rupee; also that relief works have been opened when grain is selling at 24 lbs. per rupee. For 2 annas he will be able to buy 3 lbs. of grain which is more than he actually needs. But it would be a mistake to make the wage lower. For the result may likely be that the labourer, failing to see why he should be paid less when grain is dear than when it is cheap, will reject the proferred relief, and the end of the Government will be lost. I would say then, start with the usual wage, and on no account begin by offering less. Raise the wage as prices rise, but do not make frequent alterations in it. Once a fortnight should be often enough to make any change. Be very careful about lowering it as prices fall up to that period when no danger is to be feared from labourers deserting the works. Then it may be as well to close them altogether.

Colonel Johnson.—The wage test should always permit of a man earning sufficient to keep himself in good condition by a fair day's work. The question as to the actual quantity of food necessary can be better answered by those who have been experimenting during the famine on the least quantity of food a man can be kept alive upon. This is driving the test a great deal too far. It was brought to my notice several times during the famine that the people were not purchasing sufficient food to keep them in condition, although their wages would have permitted of their so doing. I am of opinion, however, that this applied more to the professional beggar and skulking class than to real workers.

The labour test is the only real test that is necessary, or that should be applied to the able-bodied, and that not by task, but by piece-work. Task-work may be suitable for incapables when the quantity of work they turn out is not of much moment, and it is desirable not to work them too hard in order to get them sooner into condition fit to join the able-bodied, but for the able-bodied piece-work is the only system that should ever be applied. An idea prevails that at piece-work people who are in no need of relief will take advantage of the works and make a good thing out of them. There is not the slightest foundation whatever for such an idea. If the rates are properly fixed, no one is at all likely to come to work that is not obliged to do so for self-support, every man accustomed to employ labour in Mysore knows this. Piece-work with the rates properly fixed obliges a man to do a fair day's work in order to earn sufficient to live upon. It allows of his employing the whole of his belongings who may be able to do ever so little, and of his bei able, by working a little harder to support those who are able to do nothing at all, and thereby keeping them out of relief camps. It is the only test necessary or desirable, as it embodies the labour and wage test in one, and can be worked at one-tenth part the trouble and expense of any other system. Further information on this head will be given below.

No persons should be rejected because their appearance, clothing, or the ornaments they wear do not indicate penury. If willing to work at piece-work rates, it may be safely assumed they are obliged to do so. As before stated, the endeavour should be to keep up the physique of the people, not to let them starve first, and try to save their lives when it is too late. What is the use of keeping a man at starvation point all through the famine if he is unable to resume his usual avocations when it is over?

QUESTION 7.—SYSTEM OF PAYMENT.

What is the best way of paying wages, daily, or less frequently; at morning before work begins, during the day, or at evening when work is over; by calling out nominal rolls or by tickets, or by a combination of these? To whom should the payment of wages be entrusted? Explain the system of supervision most approved by experience, of checking payments, and of preventing laxity and fraudulent practices in the disbursement of wages? Have labourers been paid in grain, or partly in grain and partly in money? Under what circumstances is this desirable, and, if necessary, how is it best arranged? Have wages ever been paid by tickets, on presentation of which at a trader's shop food would be delivered? What would you advise in this respect?

Punjab.—Wages should be paid daily, in the evening, by calling out nominal rolls. Tickets not approved. Payment always in grain.

North-Western Provinces.—The majority is in favour of daily payments, to be made in the evening, and in money not in grain. Some officers are in favour of the ticket system. Payment by a special cashier.

Bengal.—Wages should be paid daily by gangs, the pay being given to the head of the gang. The cashier should be distinct from the supervising staff. Payment should be in money, not in grain.

Bombay.—12 answers. The general opinion is satisfied with weekly payments to be made by a special cashier, and in money, not grain or by tickets. The ticket system was not in force in Bombay; one officer advocates it.

Madras.—Twenty-five European and 3 Native gentlemen have replied.

Opinions vary as to the expediency of paying wages daily or less frequently. The latter is advocated where it can be done without hardship to the recipients, as offering less opportunities for fraud on the part of subordinates intrusted with payments, and enabling the labourers to purchase food at the weekly markets at more favourable rates than daily transactions, with retail dealers admit of. They vary also as to the time of day at which payments should be made. Payment by nominal rolls is preferred to payment on tickets, and money to grain payments, unless there is a local scarcity of the latter. To guard against fraud all are agreed as to the necessity of employing European officers to as large an extent as possible to supervise payments, and failing this agency to employ Natives of known respectability only, who should be well remunerated. Measurement of work and payment of labour should not be intrusted to the same individual. If payments are not made daily the regular recurrence of the pay day is insisted on.

Ch. III Qn 7

Punjab

PUNJAB.

Muhammad Hayat Khan.—The best way of paying wages will be daily, in the evening, when the day's work is finished, by calling out nominal rolls. Only tickets for admission are required to be issued. It will serve as a passport for admission into the work daily. Payment of wages by means of tickets was tried in this district last year, but the system did not work well. In this district money wages were paid to the people. I am of opinion that payment in grain to the amount of the wage due to each person may, with advantage, be substituted for money wages as soon as the distress becomes very severe, and a scarcity of food grain is felt. I have no experience of food being issued on ticket.

Colonel Parsons.—The Deputy Commissioner has usually caused wages for relief works to be paid daily at evening when work is over; this method he considers the best. The ticket system is not adopted, as a list of workmen is maintained from which the roll-call is made in the evenings.

(*c.*) Further supervision is exercised by the district officers visiting the works, and ascertaining by personal inquiries whether payments are regularly made. (*d.*) Payment has not been made in grain but always in money.

Mr. Nicholl.—In my opinion the best way of paying wages is daily, at evening when work is over, by calling out nominal rolls. The payment should be entrusted to the officer in charge of the work, and to such of his paid subordinates as he can rely upon.

North-Western Provinces

NORTH-WESTERN PROVINCES.

Captain Marshall.—Daily payments best suit the necessities of the labourers.

It is almost impossible to avoid making payments through subordinate native officials. The payments should, I think, be made on the works throughout the day for carrying, and in the evening for digging—the carriers being paid at once in *cowries* for each basket load brought, the diggers being paid by measurement; in the afternoon the muharrir who pays, or the sub-overseer, going round with his measuring rod and bag of money, and the diggers remaining by their tasks till paid. The general check on the measurements by the Assistant Engineer or upper subordinate should be sufficient to check peculation on any large scale.

Mr. Cordner.—(*a.*) Labourers in poor condition should be paid daily at first, others less frequently, say two to three times a week.

I would have no fixed time for payment.

The headman of a gang should keep a nominal-roll.

(*b.*) Payments should be made by cashiers temporarily appointed for the purpose, and not by overseer or sub-overseers of the Public Works Department.

I would give the headman of a gang an *interest* in the amount of work turned out by his labourers by means of a small per-centage on the work done.

(*d.*) I do not think that payment in grain is at any time advisable.

Mr. Atkinson, Ex-Engineer.—(*a.*) Daily.

(*b.*) In the evening when work is over.

(*c.*) By tickets. I have for many years and in many works, both in famine and not famine, used tickets largely in the employment of daily labour. Three, or at most four, rates of wages are established, and for each rate or class a distinguishing ticket. These are given out in the morning, as the bell rings for attendance and when they are seated in rows. A strict watch is kept that they do not abscond during the day. In the evening they are collected into one mass and pass one by one through an inclosure capable of admitting the labourers in single file only.

In centre of inclosure a table is put up, on which pice according to the different rates, is kept in rows; as each individual approaches the table his ticket is called out by an overseer, and he receives a corresponding sum from the disburser of cash. At the end of the transaction the tickets are counted up.

There are other details to render the scheme successful, and a very rapid and efficient mode of payment and good systematic management can thus be secured. I have worked over 2,000 people in this manner, and practice it to this day when necessary.

(*d.*) To those whose honesty can be relied on as mentioned above.

(*e.*) The system of tickets has, according to my experience, been the least productive of fraud. In single works the engineer or other officer should pay himself in the evening. During the day a guard should be placed at four corners, to prevent labourers leaving with their tickets and joining again in the evening. They are generally detected in the evenings trying to mix up with the gang assembled for payment. In scattered works the engineer or officer should appear at unexpected times and count the men with tickets. The cowrie system, so well known in North-Western Provinces is also a good plan and can be combined with tickets very advantageously and two main points—namely, attendance and payment according to quantity of work performed—ensured.

Mr. Sandys.—Daily.—By calling out nominal rolls at morning, provided the establishment is strong enough to admit of their preparation.

An officer in the Engineer establishment of the Public Works Department or a responsible civil officer.

Labourers are in the first instance divided into gangs of about 18, consisting of six men, six women, and six children, under a mate; 2ndly, eight or ten of these gangs are placed under a munshi, who, on the relief works in this district, has generally been one of the halkabandi school teachers. These munshis prepare returns of the numbers in each of the gangs under them, and after counting the numbers in the morning, give up the returns to a sub-overseer; 3rdly, the sub-overseer looks after seven or eight munshis, having generally about 1,500 men, women, and children under his charge. The sub-overseer forwards the returns of the munshis after checking them to the Assistant Engineer in charge of the work, who goes out every day with the original returns of the munshis and checks them himself. In the evening the totals of the payments to be made to the gangs under each sub-overseer are added up, and pice for that amount is either given out to each sub-overseer or to cashiers to distribute, the Engineer officer in charge invariably attending the distribution and satisfying himself that all are paid.

No labourers have ever been paid in grain.

No wages have been paid in grain in this district, or by tickets on presentation of which at a trader's shop food was given.

Mr. Tracy.—Daily, after work, by paying every man at his own place of work. To a trustworthy European or native subordinate. The officer in charge of the works should be present as frequently as possible, and take cognizance of all complaints.

Labourers in this district have always been paid in money. Money payments are best.

Mr. Lawrence.—Wages should be paid daily in the evening by tickets. Payments should be made by a different agency from that occupied in supervising the work.

As relief labour outside poor-houses has consisted altogether of earthwork, the labourers fall into two classes, diggers and carriers. The former were paid in cash at the Government standard rate, which varied according to the price of grain. In the event of the allotted work not being completed the defaulting gang were fined a pice each. Carriers were paid with zinc tickets, representing a certain number of cowries, according to the number of baskets of earth they carried. In the evening these tickets were exchanged for pice in the relief camp on the other side of the river. No carriers were allowed to earn more than one anna, which at the time this system was in force was always sufficient to provide for food laid down in the Government standard.

In the case of labourers who had not made up the anna worth of tickets the officer in charge of the payment made it up to an anna, if in his opinion the labourer had fallen short from weakness. People who appeared able to do the task received only the value of the ticket they presented.

The best guard against fraud is to utilize in supervision different Government services, non-commissioned officers and men of the native army, police, municipal, educational, and revenue officers. On no account should anyone temporarily employed for famine work have anything to do with money. All payments should be in the hands of permanent Government servants.

Payment in grain has not been tried, and does not seem advisable.

The zinc tickets were never cashed except by Government servants.

Lieutenant-Colonel Chamier.—Wages should be paid daily at 4 p.m. It is not fair to the labourers to keep them till the evening. Darkness brings on confusion and encourages baniyas to offer for sale inferior flour. Nominal rolls are preferable to tickets; the latter can be passed on from one to another; they give unnecessary trouble, and are scarcely legible. Grain has not been distributed on relief works, nor have wages been paid by tickets presentable at a trader's shop.

BENGAL.

Mr. Magrath.—There can be no doubt, in the case of real famine, of the absolute necessity of paying wages daily. The people otherwise cannot exist. They should be instructed to come at 5 o'clock in the morning, and should be counted as soon as conveniently afterwards. At 10 o'clock an hour should be given them, and at 4 o'clock they should be numbered and paid. By collecting the people into gangs, and having an overseer for a certain number of gangs, they should soon know all their gangs and be able to judge. The wages should be paid to the head of the gang, and he should be made responsible for his gang's attendance. Registers except of the gangers and the number of each class in each gang are useless. Payment should be made by a separate establishment; the persons who are overseers of labour having nothing to do with the cash, only being bound to report in case the cashiers do not pay in full. At the time of payment the gangs should be drawn up on their work, and the overseers and supervisors and higher authorities will thus have an opportunity of testing the gangs. No gang in one paymaster's length should be allowed to leave till all the gangs are paid, and all paymasters should commence payments simultaneously. By this method, and by having the paying staff distinct from the work supervising staff, fraud may be reduced to a minimum, but will never cease in India as long as the native is what he is. Payment in grain was a costly and laborious failure, as the grain had to be twice weighed, once in a large quantity from the gola, and then in small quantities on the spot, entailing a staff of weighmen never before required. It also tends to waste, as when men are served out so much rice they cook it and eat it, fearing that if they do not it will probably be stolen whilst they are at work. The distribution of dál, salt, and spices or green food is also work perfectly unfitted for an official staff. I think all officers who saw it tried in 1874 will agree with me that payment in grain is a wasteful and troublesome way of doing the work, and that it is almost impossible to check fraud. I gave it a trial because I was ordered, but I think that a money payment is the best. There was an attempt to pay by tokens (a costly experiment introduced, I think, at the suggestion of Mr. Bernard). It was only carried out thoroughly on the Public Works road, though Mr. Kisch tried it in one of my circles. The result was that the banias would at first only take the tokens for 14 annas, and finally for 10 annas, and but for the price of rice having been cheapened to 16 seers, the people would have been very badly off. I would advise the use of the ordinary circulating medium for payments and let the people spend it themselves. In this way you can, if the people are formed into gangs, pay with comparative ease and secure the greatest check if you have different persons to supervise the work from those who have the payment.

BOMBAY.

Mr. Hart.—The payment of wages should be entrusted only to cashiers acting under the immediate personal supervision of officers or trustworthy subordinates of the Department.

Colonel Jones.—Wages should be paid weekly or bi-weekly, according to circumstances. With new-comers four times bi-weekly, twice with four-day intervals, and twice with five-day intervals, and then weekly like the others.

If there are any people who cannot wait for three days, small sums can be advanced by the subordinate in charge, who should have a small imprest advance for this purpose. The payments should be generally made in the evening by calling out nominal rolls, and, if not finished, should be completed the next morning.

The payment should be made by cashiers, in the presence of either the officer in charge or some person deputed by him for the purpose.

With very few exceptions labourers were paid in money only.

General Wilkins.—Wages were paid, as a rule, weekly. Sometimes payments were made bi-weekly, sometimes daily. Daily payments were necessary for

new-comers. Payments were always made in cash, and were conducted with much regularity. Officers made their payments in the manner they found best suited to the nature of their works. On concentrated works the payments were made after work was over. Payments on extended works, such as road works, were made sometimes during working hours by gangs in succession, being visited by the cashiers and officers; sometimes by payments made on Sundays, and in other modes adapted to facilitate the speedy payment of the people. The people were always paid by roll-call from the muster-rolls kept by karkoons. One karkoon kept musters of from 200 to 400 people. Officers were always present during payments. Wages were never paid by ticket.

I would strongly recommend the adoption of a ticket system for the payment of famine labourers.

Government should obtain from England card tickets similar to those in use as railway tickets. These tickets should be of different colours, representing the daily wages of the different classes, men, women, and boys. A coloured ticket would then represent a distinct amount. A man coming on the works would receive a ticket with the date stamped after the manner in use at railway offices. It is the practice to have one or more roll-calls during the day to see that the people are at work, and these roll-calls, when large numbers are concerned, affect the out-turn of work very materially. In place of having long sheets of names called out after the people were duly arranged, the subordinate in charge of the work provided with a ticket cutter would snip or punch the tickets of the work-people, either passing along the line, or the line filing before him. As men are, if absent, fined, a ticket with two snips would represent, say, a whole day's pay, with one snip half a day's pay, and so on. A cashier belonging to a certain work or works should take up his position at a pay office, and pay the value of the tickets over the counter on their presentation. In this manner payments would be made easier and better to all concerned, and the cashier would have his tickets for vouchers to his accounts.

Mr. Propert.—The method of the payment of wages is about the most difficult question connected with large relief works. As regards Khandesh it was never found absolutely necessary entirely to break through the ordinary rules of the Public Works Department on the subject, although occasionally weekly payments were substituted for monthly. At times, however, when distress was at its worst, we had to advance money to persons arriving on the works in a weak state, and the amounts so advanced were cut from the wages subsequently earned. In order also to prevent as far as possible deviations from the rules of the Public Works Department, on a few occasions I employed banias to advance grain to labourers on receipt of a written notice from the overseer in charge of the work that certain persons had earned a certain amount. I do not, however, like the practice, as the bania, of course, charges something for the accommodation. Daily payments are to be avoided as much as possible, inasmuch as the payments must interfere with work. On one occasion, in August 1877, when circumstances forced me to commence a relief work at a moment's notice, without plan, estimates, or even establishment, in the immediate vicinity of Dhulia, under Civil supervision, I found that daily payments must be given to prevent actual starvation. Such payments used to last from 5 a.m. up to 10 a.m., consequently but little work was actually performed. This was a special case, however, as Bhils and other turbulent classes were rushing for employment at the rate of about 1,500 per diem, and no proper arrangements had been made for their reception. The unruly concourse was eventually dispersed by a tremendous downpour of rain, which luckily commenced about a fortnight after the emergent relief work was started.

On a properly established relief work payments should, I think, be made weekly, with the necessary arrangements for advancing money or grain to new comers who are destitute. Avoid grain payments as far as possible, and on no account issue tickets for presentation at a trader's shop. Such a system leads to irregularities. Tickets should, in my opinion, most certainly be used, but they should be given by the overseers, &c. to workmen for presentation to the cashier, who should be quite separate from the supervising officer. Money should be given by the cashier in exchange for the tickets, and the tickets themselves act as receipts or vouchers for the total amount expended on each pay day.

Mr. Norman.—The wages on our works were paid once a week. In cases of necessity advances were given in the shape of orders on the grain dealers to supply food to recent arrivals until the receipt of the next weekly pay. Payments can best be made on nominal rolls, which should be repeatedly checked by the supervising officer. In this district it was never necessary, with a few slight exceptions, to make payments in grain. Wherever possible, it is always better to pay in money and allow the labourers to make the best arrangements they can. I would not advise payment by tickets, except when it is necessary to make advances. On Civil works payments were always made by the mamlatdar or some superior karkun under his orders. The officers of the Public Works Department will be able to explain what arrangements they made, and whether they would suggest any alterations in the mode of payment.

Mr. Spry.—I think weekly payments are the best and sufficient, but they must be made with undeviating punctuality. Saturday is the best day, because that gives the next day (Sunday) to the labourers to lay in their supplies.

I have had no experience of the ticket system; but should prefer cash payments on calling out the nominal rolls. The payments should begin in the morning by the cashier visiting each gang as it is at work, and paying each individual off then and there and in public.

The cashiers should be totally unconnected with the works beyond making payments, and should be men specially appointed and well paid.

One of the greatest checks against laxity and fraud lies in publicity in payments. The members of a gang know each other pretty fairly, so that if anyone is absent at the time of payment, or is represented by anyone else, the fact is generally known. Then, again, the supervising officer should be continually on the alert whilst payments are being made, and should test the rolls and make individual inquiries. Without these precautions frauds will soon crop up.

Labourers have never been paid in grain here, nor have tickets on traders' shops been issued. Not having had any experience on such points, I cannot offer any opinion.

Mr. Moore.—Wages should be paid daily, every morning if possible; if not, at least twice a week by nominal rolls. I think wages should be paid in money, not in kind, and the people should buy the grain for themselves.

Mr. Hamilton.—I think once a week is often enough to pay wages. I do not advocate payment in grain. Payment should only be made by trustworthy European officers, and at the time the work done is measured up. By the system of piece-work in family parties there is no fear of any frauds being practised. Payment partly in money and partly in grain was tried during the famine, but a great waste of time resulted.

Mr. Percival.—New-comers should be paid daily wages for a fortnight; after that weekly payments will do, as they arrange with the shopkeepers by that time. Wages should always be in money; it is easiest and safest for both parties, and there is less fear of cheating.

Colonel Anderson.—When the numbers are very great it is not possible to pay daily. But they should be paid at short intervals, not exceeding a week at most. Deferred payment means long running debt to the bania, karkoon, muccadum, or some one else, and the diversion of a material part of the wages to interest. In Bombay, wages were, I believe, never paid in grain, and I should greatly doubt the expediency of such a plan or it being liked by the people. Fraud would be greatly facilitated in several stages, in the purchase of the grain, in storing it, and in the final disbursement. I have never heard of tickets being used for payment. In all cases requiring numerous payments of small sums a difficulty always and at all times arises from insufficiency of small coin. A silver 1½ anna and 2½ anna would be very useful fractional coins for small payments; these might be square to distinguish them from the smaller round coins.

Mr. Robertson.—It is not desirable to pay wages daily, as such a system sadly interferes with work and entails the loss of a large portion of the working day. Wages should be paid weekly. On a large work certain gangs should receive their wage one day, other gangs the next day, and so on.

I cannot say, having had no experience, whether nominal rolls or tickets are the best, but I should be in favour of the muster-rolls. On works under the Public Works Department the wages are, I believe, paid by the officer generally entrusted with that duty, viz., a subordinate officer of the higher grade; but under Civil Agency by the special relief mamlatdar, regular mamlatdar, or first karkun.

Regarding the question of supervision for checking payments, and of preventing laxity and fraudulent practices in the disbursement of wages, I need not refer to works under the Public Works Department, that will be noted by the officers of that Department, but as regards Civil Agency works, the only feasible system appears to be that which was adopted in this Presidency—

(*a.*) Muster-rolls called over twice daily.

(*b.*) As trustworthy a supervisor or overseer as could possibly be obtained.

(*c.*) Payments made only by the higher native officers of the Revenue Department.

(*d.*) Constant and unexpected examination of the work and mustering of the people by the Assistant Collector or Special Famine Officer, by the Mamlatdar, and Relief Mamlatdar.

As long as there are not too many Civil Agency works in a taluka, these precautions have, I am glad to say, proved to be sufficient to prevent fraud.

Labourers have, when employed by municipalities, been paid in grain. In a few cases under Civil Agency they were so paid at the commencement of the famine, but this was as soon as possible discontinued. Payment by grain necessitates the purchase of grain by Government, interferes with local trade, and tends to interfere with a satisfactory supply of grain to the districts.

I am not aware of wages having been paid by tickets, on presentation of which at a trader's shop food would be delivered. I certainly would not recommend any such system. The only advantage it can be supposed to have is to prevent any peculation of the labour wage by the understrappers, but these people would soon meet you there by a combination with the trader.

The system would be most distasteful to the labourer; he prefers dealing where and with whom he pleases; he loves a little bargaining; he sometimes may not wish to spend all he receives on grain; may like, if he can, to aid a relative; while again the system would interfere with trade by giving one or two dealers a preference of custom.

Mr. Bosanquet.—Of course it would be best if wages could be paid daily, but there are two difficulties in the way of their being so paid. One is the great amount of time that is lost in making daily payments, and the other the difficulty of obtaining enough small coin for the purpose. If the labourers could be divided into gangs and each gang could be paid by piece-work, the value being calculated by a European officer, the difficulty of making payments would be much reduced. Twice a week is probably quite as often as the officers in charge of large relief works could arrange to make payments. If the measurements were made and the payments given by native agency, the European officer in charge of each work could check fraud on the part of the subordinate by personally measuring up the total work done.

Some of the questions in the body of paragraph 7 can be best answered by the Public Works officers, but I may state my opinion pretty clearly, that honesty in paymasters is not to be expected from subordinates receiving salaries of not more than Rs. 20 to Rs. 40 per mensem. The only way of preventing dishonesty and laxity with regard to payments would be either the adoption of piece-work payments, or by the payments, if possible, being made in person by the Executive Engineer in charge of the works, or by his assistant. I am under the impression that here payments were at one time made partly in money and partly in grain, but that such mode of payment was quite exceptional. The usual mode of payment was in money. When local traders have not the capital to enable them to import grain to sell to labourers, it may be well for Government to import grain on its own account in order to make grain payments. Wages were never paid here by tickets. I am not able to express an opinion as to this mode of payment. If it could be successfully carried out, one difficulty in making frequent payments to the labourers, that of obtaining sufficient copper and small coin, would be obviated.

Mr. Keyser.—On public works the system, which I know worked well, was to pay once a fortnight, and give advances after three or four days, or often less, after arrival on the works.

I believe it to be almost impracticable to make daily payments—

1. On account of the waste of time involved in payment.
2. The difficulty of checking accounts—a difficulty to be better explained by Colonel Melliss, Examiner of Accounts, Public Works Department, than myself.
3. The impossibility of measuring the work every day to see if tasks were duly performed. The minimum pay could, therefore, only be given, or part of a full day's pay, and this would involve a daily and a periodical payment.

As it was, the grain dealers who lived on the works gave credit and were present when the pay was issued, to get their accounts settled.

On Civil Agency works I paid weekly, and endeavoured always to arrange with the dealer at the nearest village to give credit in advance of the pay. There was never any difficulty except in one or two instances, where orders were neglected and pay not issued for periods of a fortnight or more.

Lieutenant de Villamil.—Wages are, of course, best paid daily. I think there can be no two opinions on this point; but it is not generally possible. I do not think it will be found feasible to pay the coolies *for any continuous length of time* oftener than every three days. If this be done regularly for five or six months I am satisfied that the arrangements will have been excellent, and will be all that can be desired. New arrivals and convalescents from hospital should be paid every evening for the first week or two, but as these will be in the minority, it will be perfectly feasible to get this done.

I have always paid and seen payments made on nominal rolls, but I think a system of "checks" or

tickets would be good if care were taken to see that they were not "discounted." I have no experience of this, so cannot give more than an opinion on the subject. It will be best to carry on the payments all day; one gang can be knocked off work at a time and paid, when it can be made to resume work Payment in the evening or on Sundays is generally objectionable as the coolies often receive less pay than their due; a larger staff would also be required for payments in the evening.

Payment in grain is troublesome and is very open to fraud; if proper bazaar arrangements are made on the work it will be found to be an unnecessary trouble and would probably not be popular with the coolies. Payment, partly or in whole, with cooked food would be good, but the same objections and reasoning will apply as to payment in raw grain. In June and July 1877, at Badami (Kaladgi), I arranged to get cooked food sold to the coolies by a little encouragement to some shopkeepers, and the result was excellent; it was very popular, and the only difficulty I found was in making the supply equal to the demand, as the dealers had not much capital. This system is infinitely preferable and probably much cheaper than interference on the part of the State, and it could easily be carried out on any work by taking a little trouble.

Prevention of frauds in payments is very difficult. I make the head-cooly and "maistry" responsible for the verification of their coolies during payment. If any complaints are made of non-payment I make the head-cooly (mate) pay the amount due and fine the maistry for neglect of duty. It is not, perhaps, a very legal method of operation, but it appears to work very well, and, practically, complaints are reduced. It is necessary, of course, to combine with this as much personal supervision as possible, and that is best done by making the payments *on the work* and *during the day.*

MADRAS.

Mr. Longley.—The best way of paying wages is to pay daily, if possible, in the evening when the work is over. I have never seen payment made by tickets, and cannot therefore speak about that mode of payment. Whatever system is least complicated is the best.

2. Wages should be paid by special cashiers, and such cashiers could not pay more than 500 coolies in an evening. The continued supervision of the European officer on the work is the only guarantee for payments being properly made, but, if the overseer who measured is present with the cashier who pays, fraud is less likely to occur unless both combine, and even then the coolies cannot be much cheated if the European officers on the work do their duty.

3. The laborers were never paid in grain.

If there is no bazaar near the work (which has not yet occurred anywhere in the district) grain payment will become necessary.

4. I object to tickets for food, which introduce the "tack" system. The cooly should be allowed to spend his money where, and as he likes, the only duty of the officer in charge being to see that a bazaar of sufficient size is handy to the work.

Mr. J G. Horsfall.—In Ganjam in 1866 I paid wages daily, the early morning following the day for which wages were due. The laborers were divided into gangs varying from 20 to 50 persons, the gangs selected their own headman for each gang, and to him the wages were paid, leaving him to distribute. This system was consonant with the habits of the people, and it was very rare indeed that I had any complaints of non-payment. Each headman received one anna extra per diem. He furnished each morning the numbers in his gang—male, female, and children—and again in the evening. These were noted down at once by the gumastah or clerk employed by me for the purpose, compared with the nominal register, and checked twice during the day and the results furnished to me every evening. Once a week at least, and generally much oftener, the work done by each gang was measured and tested by me, and fines imposed for short work by reduction in that day's wages.

Payment in grain is very onerous, and I prefer the system adopted by me of selling to the work-people. Each headman took his gang to the depôt and was allowed to purchase not more than a limited quantity per head, and as the gumastah deputed to sell moved along the road, each gang was occupied but a short time in the purchase of as much as they were allowed.

I believe Mr. Martin, sub-collector, Dindigul, tried payments by tickets when works were first commenced in the Palair taluk in Madura district, but the system was soon discontinued. It did not commend itself to me at the time, and of this I informed him.

I think money payments preferable to any other. If necessary, grain-depôts may be established where Government grain may be sold at the bazaar rates.

Mr. Fawcett.—Wages were paid every second day in this division until the transfer of the works to the Public Works Department, and so far the plan adopted was found to answer very well. One mistake, however, was committed, I think, *i.e.*, paying in the evening instead of in the morning. I shall endeavour to put down what I think are the advantages and disadvantages of each.

In favor of paying in the evening it may be said:—

(*a.*) There is sufficient time during the day to get the money and grain brought and got ready for payment when work stops; while if payments are made in the morning before work begins there will often not be time, so that if payment is made the coolies begin work late. This defect in morning payment could generally, however, be easily remedied by better arrangements.

(*b.*) If payments are made in the evening the coolies have less money about them in the day time, and have less inducement to go away and leave their work. This, however, can be easily prevented.

On the other hand, the advantages of paying in the morning are:—

(*a.*) It has the effect of making coolies come punctually to their work.

(*b.*) There is plenty of light to pay away the money, and consequently less danger of the paymasters appropriating any part of it. It was noticed here that those road superintendents who could not be depended on, and the paymasters, always tried to make their payments as late in the evening as possible.

(*c.*) The payments are made more regularly, as they must always be made before the time for the coolies to begin work.

(*d.*) When payment is made after work in the evening, and is delayed till late for the reason referred to above, the coolies are kept up later at night than they need be. This affects their health.

The only objection to morning payments of any weight—the former of the two given—is one that could generally be got over easily by having a small depôt and treasury close to each work, besides the larger one for the range, and the three points of superiority over evening payments that the system possesses are, I think, evident.

Mr. Price.—I consider twice a week quite sufficiently often. Once a week, if payment *is regularly and punctually* made, is, generally speaking, quite frequent enough. I prefer paying in the evening. It is in accordance with established custom, and between pay time and supper time the coolies have plenty of time to make their purchases. Paying in the morning, or during the day, would, I consider, induce straggling. I have always paid by nominal rolls. I would certainly not do so by tickets, as, in the first place, the nominal rolls remain as vouchers, showing exactly to whom payment has been made, and, in the next, tickets can be sold or transferred. Combining nominal rolls and tickets might, perhaps, lead to the detection of a few petty frauds, but the double system would give very much more trouble than it is worth. I prefer paymasters under the orders and supervision of the superintendent or chief officer in charge. There is no effectual check upon payments of which I know or can suggest, excepting constant supervision and inquiry of coolies regarding the payments made to them. There is no paper check which cannot, in practice, be avoided. I always let the coolies know exactly what their pay was, and told them to complain if they received anything less. This they were by no means slow in doing. I have paid laborers in grain alone, and partly in grain and partly in money. I think it a costly process, and would resort to it only when sufficient supplies are not available in the neighbourhood of any particular work, and, perhaps, when coolies are at first taken on. The mode of which I approve is to have a store-house on the works, for the superintendent to indent on pay-day for the quantity required for each gang of his party, and to have this taken either by cart or coolies, as may be most convenient, to the usual pay place. It should there be shot out on a mat and served out. I always measured the grain without paying for so doing, by taking, at haphazard, two coolies from the gang being paid, one using the small and the other the large measure. This prevented cheating and quarrelling, and was entirely approved of by the coolies themselves. I have no experience of paying by tickets to be taken to any particular shop. I do not approve of the system. Tickets can be sold, stolen or lost, and there is the further chance of the shopkeepers, not only cheating in the measure or weight, but in the quality of the provisions supplied. The system which prevails in the normal state of the country, *i.e.*, giving the coolies their wages in money, appears to me the most desirable.

Mr. McC. Webster. — "Professional Agency" coolies should be paid every three days, and always up to the end of the previous day. "Civil Agency" coolies should be paid daily for the first fortnight of their admission; then every other day for another fortnight, and then every three days as "Professional Agency" coolies.

Both should be paid by calling out nominal rolls.

(*b.*) The payment of wages should be entrusted to a subordinate officer of the Public Works Department other than the officer who measures and checks the work and prepares the nominal rolls. I think that the duty of keeping the nominal rolls, measuring the work and making payments should be entrusted to three different officers. The maistry in immediate charge of the gang should keep the nominal rolls. A sub-overseer should check the work and sign the nominal roll as passed for payment, and the overseer (if possible) should make the payments, occasionally measuring up work. They even would thus be a check one upon another, and, owing to a division of labor, payments could be made more frequently and with greater regularity.

Mr. Crole.—The best time for payment is the evening. It should be made by mustering each gang and calling the roll. For feeble coolies, daily payments are necessary. The others should be paid bi-weekly. The duty of payment should be entrusted to the Revenue Department. Wherever the Public Works Department have had the payments in their hands, one of two things has happened. Either the coolies have not been regularly paid, owing to excessive attention devoted to tasking, defective management or weak establishments, or else the whole time has been devoted to making payments, and the work exacted has been next to nothing. The officer entrusted with it should make the payment to each gang according to the amount endorsed on the roll by the Public Works Department officer. Payments in grain are a mistake. They disturb trade, are bulky and difficult to make, and do not leave the person relieved with sufficient liberty to buy what food suits him.

Mr. H. T. Ross.—My experience has been that *daily* wages are necessary whenever the laborers are *bonâ fide* "famine" subjects. I tried less frequent payments, but found that starving coolies, who were allowed a bare subsistence of 1 lb. a-day, could not, when they got several pounds in hand at once, resist the temptation of eating more than 1 lb. a day, and so ran out of food altogether before next pay-day came round. I have also found the best plan in making daily payments to be to pay during each day for the previous day's work, the process of payment, if there were many coolies, taking several hours, but being so arranged in detail as not to interfere appreciably with work.

In arranging for grain-payments I found the best plan was to attach a regular store to each work, and to have the bags required for the day's payment carried to the work in the morning, and payments made there on nominal rolls exactly in the same manner as money-payments.

Major Baynes.—In framing a scheme for the distribution of wages the objects to be secured are, first, the regular recurrence of the payments; secondly, the full receipt by the payees of their respective dues; and, thirdly, the prevention of fraudulent charges against the employer. The first object is easily attained, because it is simply dependent on a matter of detail in the organisation of a sufficient number of measurers and payers, and in proper arrangements to secure money in sufficient quantity; but to secure the two latter is impossible if they be entrusted to ordinary native agency, however well supervised. The only method of *securing* them is to employ the direct agency of European officers; but as that would probably be considered too costly, we must be content with arriving as closely to their attainment as the use of European agency in general supervision, and the institution of a system of checks on the native payers will admit.

Weekly payments do not appear to me practicable for reasons hereafter given; if they be so, then they are much to be preferred to daily payments, because they diminish the number of paymasters, they require a more simple system of accounts, and they lessen the opportunities for robbing the coolies and for defrauding the Government, and also because they remove the necessity for carrying large quantities of copper coins for payment to the coolies; this last advantage is a great one.

If famine coolies arrived at a work with a sum equivalent to a week's wage in their possession, there would be no hindrance to the adoption of weekly payments; but as unfortunately they present themselves in a state of impecuniosity and of hunger, and as being strangers to the locality, they cannot obtain credit with the local shopmen, they require to be put in funds at once. It appears to me that the amount thus given to a laborer on arrival must not be styled an "*advance*," for it is certainly *irrecoverable;* and that the total sum thus given to him must equal the wage for the intervals of payment obtaining on the work, in addition to the subsistence wage he may or may not receive on day of arrival; that is, if payments be made once in a week, then the laborer will require seven days' pay on arrival; if they be made daily, then

one day's pay unless he were in the first case to receive daily an advance of one day's pay during the whole time he remained on the work. My reason for proposing to make the advance, or whatever it may be called, in a lump sum on arrival, is to prevent confusion of accounts and peculation. Reference to answer to Question 17 will show the respective duties of the clerk who registers admissions, and of the paymasters of gangs on nominal rolls; and if the payments of the latter are not strictly restricted to payment of *wage* for days worked and outturn shown in the nominal rolls, it will be impossible to check peculation, and to prevent confusion in the accounts. Payments on nominal rolls are debitable to cost of work, but advances of this description must be free gifts if the principle of the wage test be maintained, which limits a day's earning to a day's expenditure.

If dependence could be placed on the laborers that they would not abscond on the receipt of a week's wage as a *retaining fee*, it might be an actual gain in the long run to make to them this present; but as such reliance cannot be placed in them, the idea is not even worthy of consideration. Bi-weekly payments possess no other advantage than that of reducing the amount of advance; but as they necessitate a double number of nominal rolls, I would recommend the daily payment system. Daily payments can be carried on as a running account (to be adjusted weekly on some fixed day) when measurements are taken and the sums due to the coolies are calculated; but when the work of a gang is measured up for final payment, the nominal roll on which such measurements and payments are made should be sent into office for check and record; bi-weekly payments would, therefore, double the number of rolls and of measurements and of necessary calculations for payments to be made upon them.

I have already stated that to secure an honest distribution of wages the agency of European officers is necessary; failing this, I can only suggest the employment on high salaries of Eurasians or natives of well known and respectable families—strangers to the district, and unconnected with the Department of Public Works. They should be so well paid that any sum which they could make by petty robberies from the coolies, or fraudulent charges against Government, should be as nothing when weighed against loss of reputation and present emolument. A paymaster with eight gangs of 100 members to pay daily has full occupation; the amount of money which would pass through his hands in a month would be about 3,400 to 3,500 rupees. I think that a man to whom so much responsibility is entrusted should not receive less than 100 rs. per mensem. I would suggest the frequent interchange of paymasters on the works in a taluk or district, as this manœuvre is preventive of collusion between overseers, gangsmen, and paymasters. Payments at all events should not be made by the same person who measures the work for payment.

Supervision of Payments.—Coolies are liable to be defrauded in many ways. The most common are, short payment or withholding of wages actually earned on a fictitious outturn; deduction from amount of advance given on arrival at the work; and direct robbery by intimidation. The first method is simple, and only to be detected by measurement made by an European officer on the *same* day as by the overseer. The overseer in collusion with the gangsman informs the gang that they have done half a day's pay short work; but the real work done is entered in the nominal roll, and the proceeds, Rupees 6-5-6, are shared between the paymaster, the overseer, and the gangsman; if one day's pay be deducted only once a month from each gang, the proceeds of eight gangs would amount to 100 rupees which would make a tolerable addition to their respective pays; again, when a cooly arrives at the work, if he receives an advance, it may be, I fear, considered a certainty that he will have to pay his footing. Again, the coolies are openly robbed by the gangsmen; they threaten some member of the gang with expulsion on account of idleness or incapacity, or that they will report him absent or late, and so get small contributions from them to avert the greater evil.

Peculation.—Government is defrauded by false measurements in excess of actual outturn. The payments to coolies being made on the correct outturn, no one complains; and the overseer, gangsman, and the paymaster share the surplus. As before stated, these petty peculations cannot be *certainly* stopped except by the employment of an European officer to measure and see payments made; but I think the expedient suggested (above) would do so to a great extent. The only checks in way of supervision are to personally question the coolies as to the sums they have received; but the officer must be acquainted with the vernacular to do this. There is no use doing it in the presence of the paymaster or through an interpreter, for the coolies will never speak out under those circumstances. And the other is to make frequent check measurements on measuring up days.

Payment of Gangs.—Gangs should be paid on the places where they are at work. One paymaster should be able to pay eight gangs or 800 persons daily; each member of a gang should receive his exact due into his own hand. The practice of giving a rupee to a member of a gang to pay to others fractional parts of a rupee due to them is very objectionable; for it is the source of frequent disputes. Disbursements of wages should be attested in the nominal rolls by the initials of the paymaster and gangsmen. As payments are made daily, on an account which is closed weekly, a certain day in each week must be fixed for measuring up and adjusting the pay of each gang. The most convenient day for measuring up is Sunday, as, then, the coolies are off the works, and they are not delayed by the overseer while taking measurements; but this prevents Eurasian or European overseers from getting a day of rest, though in famine times no one should think about *rest*; another good day is Friday, as then the coolies are paid upon Saturdays, and Sunday can be appropriated to scrutiny of the rolls in office. However, this is only a matter of detail; the only principle is, that the recurrence of the pay-day must be strictly regular. On the day previous to that fixed for payment, the overseer authorised to measure up should go round his gangs in the afternoon, and should enter in the nominal rolls the amount of work done since his last measurement, as also the values of the different species of works done. The roll should then be taken to the paymasters by the gangsmen, the paymaster will compute each individual's pay and disburse on the next day. The limits of deduction to be made daily from any individual's pay are given in Appendix D., p. LXXIV., but should their aggregate sum cause any member's pay to be issued on the weekly adjustment to be less than the full pay of the class next below that in which he is employed, then an equivalent amount of stoppage must be deducted, so as to raise it to that amount. On works of Class II. this system must be slightly modified. On roads the overseer will go down his length a day before the paymaster, and the gangsman will await the arrival of the paymaster on the next day. After payments have thus been made in weekly adjustment, the nominal roll will be retained by the paymaster for submission to the cashier as vouchers for his payments, and the gangsmen should have a fresh roll prepared, which the paymaster should verify as a correct copy of the names on the roll he retains. The fact of his having done so will be attested by his initials at the bottom of the name column.

Payments made in grain or partly in grain and partly in condiments.—At the very commencement of relief operations this system was in force for a short time. The value of condiments appears to have been sometimes given in coin, but it is, in my opinion, an objectionable one; it involves intricate accounts, and it does not possess any advantage over payment in money, unless the Government are able to bring grain

to the works at a cheaper rate than the local dealers, and even then I would not pay in grain. I should simply lower the wage to the reduced price of my grain, and leave it to the coolies to buy at the cheapest market; but this must not be done spasmodically; if begun, it must be carried through to the end; for if you supply grain for two or three months and fail, then the local dealers will not be prepared to meet an extraordinary run upon them, and moreover they will recover all past losses by future exorbitant prices.

Wages paid by tickets on shops.—This system was never adopted in my taluk, nor would I recommend its adoption; it would entail much extra writing, because the tickets would have to be filled up from entries in the nominal rolls, which have first to be represented in money and then expressed in terms of grain, and so any amount of discrepancies would arise. Moreover, it would not commend itself to the natives, because some might have a small private store of rice or condiments, and might not find it necessary to spend the whole of their earnings every work on the purchase of provisions.

Mr. Oldham.—The payment of wages would vary under Public Works Department and under civil officers. The following was my system:—

Special arrangements were made for persons who had newly joined the work and who are not entitled to a full day's wage.

The regular gangs were paid daily and in the morning, not before work began but while at work. As each gang was paid separately its withdrawal from work was no hindrance to the rest.

I insisted on daily payments because accidents often occur to interfere with the pay day, bad weather, death, flight or arrest of paymasters, non-arrival of remittances. With a bi-weekly or weekly payment any such interference tells hardly, probably fatally, on laborers on a subsistence wage. I insisted on morning payments for the same reasons. Evening payments were often interrupted or deferred.

The payment of wages was entrusted to a staff of paymasters who were subordinate to the Treasury and Account Department and not to the superintendents of the work. They were much lower in position than these last officers, and as they could be reported on by them were generally in some degree under their control.

The laborers were in gangs of fifty under a gangsman or head cooly, who was one of themselves and worked with them. Five gangs were grouped together under a gang-writer who kept the nominal rolls. All these subordinates were directly subordinate to the superintendent of work. To each paymaster were allotted eight gang writers' gangs to pay.

The coolies were paid in the morning for the preceding day's work. In the afternoon the gang-writer made out a slip, or abstract, specifying the number in each gangsman's gang, with a memorandum of any fines or deductions made by the superintendent during the day, and noted in the gang-writer's permanent nominal roll, and handed it over to the paymaster. The latter parcelled out the pay of each gang according to these abstracts. Next morning he and the superintendent briefly checked each gang by counting them, resorting to the nominal roll only in cases of doubt, and after adjusting his parcel of money if necessary, made it over to the gangsman or head cooly who distributed it there and then, and while the next gang was being checked. The delay at each gang from the beginning of the check till the last number had been paid was not over five or seven minutes. It was a particular rule that no money was ever to pass through the hands of the gang-writer, who was generally a Brahman. The gangsman was a fellow-villager and workman of the laborers themselves.

Thus the superintendent, who was generally a British non-commissioned officer, and the paymasters were the only subordinates trusted; while the gang-writer was not trusted at all. The distribution by the head cooly or gangsman took place in the presence of the paymaster and superintendent, and regarding it I never heard a complaint by the laborers.

Briefly, the best system for ensuring an honest and punctual disbursement of wages, is to have the disbursing agency separate from the subordinate agency for supervising work; to let the returns of the one agency be a check on the bills of the other; and not to overburden the work-supervisor with more than 3,000 people whom he has daily to muster, or the disburser with more than 1,500 whom he has daily to pay. Further, to leave the distribution of the pay to each individual to the work-people themselves, that is to their representatives, and not to a gang-writer or high-casteman who can tyrannize over them by reporting them for fines, for late attendance or for idleness, and so extort from them when he pleases.

Lieut.-Col. Prendergast.—Daily wages should not be given, except when people first come to work quite destitute. The best way is to pay gangs in succession, during the day, by nominal rolls. The payment of a large number of people at once is very tedious, unless there are a great number of payers. An overseer or other superintendent, above the class of sub-maistry, should be present when possible, to check fraud in the disbursement of wages.

Laborers have never been paid in grain; always in money. I think this is the best system. I have found that the people prefer weekly payments to more frequent payment: the reason is, that at the nearest village there is a weekly market, and they buy a week's supply at a slightly-reduced rate from that which they would give when purchasing casually on other days. This would not be the case in a town; but quite large villages have their special market-day once in the week, and in small villages especially, supplies are brought in on these occasions.

Captain Awdry.—Wages should be paid daily for the first fortnight after coolies come to a work, and then, as a rule, not less frequently than twice a week. I have known a case of the coolies preferring to be paid once a week, so that they could procure their food at the weekly markets. I, however, consider that twice a week payments should be made, one payment on Thursday for the work of Monday, Tuesday, and Wednesday, and one payment on Saturday evening for that and the two previous days; to this Saturday evening payment I attach considerable importance, for—

(1) it necessitates the accounts for the week being made up;

(2) it allows the coolies an uninterrupted Sunday for rest;

(3) it removes all arrears, so that coolies can go free to their homes and not return if they are disposed. Nominal rolls are called out; in the roll is the name of the cooly's father *which is not called out;* when he comes for his wage on his name being called he is asked his father's name; if he answers correctly, he is paid.

Captain Morris.—With a system of piece-work I should not consider it necessary to make daily payments, they might be made every other day; but if task-work is insisted on, payment should be made daily. The best time for this purpose is the middle of the day, when work should be stopped for a couple of hours, say from 12 to 2, to enable the laborers to have their mid-day meal, and advantage can be taken of this break to make payments. To pay in the morning before work begins would necessitate work being commenced rather late, and it is most desirable that it should be commenced as early as possible, so that the bulk of the task may be completed before the hottest part of the day. If payment were deferred till work was over in the evening, it would often, if not always, be dark before it was completed, and this might cause confusion. Payments by tickets would probably lead to the introduction of forged tickets on a large scale,

and as payment must be made on or near the work, it appears as simple to pay in money at once, as to issue a ticket for payment.

No laborers have ever in this district been paid in grain, either wholly or in part, and I do not think such a system of payment advisable so long as grain is procurable in the markets.

Ruthna Sabapathi Pillay.—For the first week or fortnight daily wages may be necessary, but subsequently it is to the advantage of the coolies to pay them weekly. In these parts fairs or shandies are held weekly at certain places; at other places it is almost impossible to get any thing; even in places where shandies are held, except they be towns, on other than fair days nothing can be had. As fixing the price of grain at which it should be sold discourages trade, and people have not sufficient inducements to take grain to the camps, and we have one of the week days a holiday, weekly payments are good. Then two or three of the gangsmen join together and buy things and divide among themselves. Retail dealers take a longer time in selling the same quantities than a wholesale dealer, and has more trouble to undergo in the bargains. He must consequently sell at greater profits; and the cooly cannot, therefore, expect the same quantities when he buys for two annas as when he buys for a rupee. Daily payments are, therefore, embarrassments, detaining people from work, generally they have to go a distance to buy food, and even when they do go, not unfrequently they are disappointed.

Payments were made all in money. In places where traders cannot be induced to go, grain must be bought and conveyed and paid for wages. There should be a stock at the head-quarters of the division or sub-divisions, and distributed to the care of cashiers as money.

Rev. Newport.—The advisability of paying daily or less frequently depends very largely on the proximity of bazaars or markets to the place of payment. If the work is in the vicinity of a daily bazaar, it will be for the convenience of the people to receive a daily wage. They will daily purchase their daily supply of food, and never have a store either of money or supplies to tempt thieves. If a daily bazaar does not exist in the near neighbourhood, there will certainly be a weekly market near. In that case the wages should be paid weekly on the day preceding the market, or on the morning of the day itself if practicable.

MYSORE.

MYSORE.

Major Moncrieff.—In times of real famine it is safest to pay daily, and in no case less frequently than twice a week. I think, on the whole, evening payments with nominal rolls the best plan, but there is much in favour of morning payments. The pay should be given in the presence of, if not actually by, an upper subordinate (overseer, supervisor, or sub-engineer) of the Public Works Department, and the engineer officer in charge should at pay time be present with one or other of the parties under him. I know of no system of check that can be devised if the officer does not personally see to payments, and if he does I think it enough. If he has parties scattered over a length of miles he cannot visit them all daily perhaps, but they ought to know that he may any time be among them.

If a system of labour tickets or tokens can be invented that would be safe from forgery I think it would work well, and they ought to be easily invented. Supposing they were ordered from England (or better still from France) made of some material not to be had in India, papier maché for instance, they would be quite safe.

Mr. Ricketts.—On piece-work, the only system I advocate for people able to work (although they may not be able to do a full task), the work is measured before it is commenced, and is divided so that the unit of measurement is a fair (generally easy) day's work for the people employed thereon. For the convenience of payment these units generally represent work to the value of one rupee or half a rupee. One or more of these units may be taken by any man, woman, or boy,* and they may employ thereon any number they please. One person's name only is put down, however, in the duffadar's books, and every unit completed is paid for each evening, a note being kept of any incomplete units. Under this system there are no nominal rolls, tickets, pay tables, or accounts further than so many pits at so much, and a tape run over the pits is a check at any time upon the whole work from the commencement.

When properly worked, one trustworthy subordinate is ample to supervise and pay 5,000 or 6,000 people, and there is no chance of fraud. This system was worked on the Durmaboody Tank, in Bangalore, and was a complete success.

If, however, the people are to be paid daily wages, they should be paid every evening; there is no trouble about it if properly managed. The people will, of course, be divided into gangs or duffas with a duffadar in charge of each. A maistry or sub-overseer in charge of a certain number of duffas, and an overseer or upper subordinate in charge of a certain number of sub-overseers' charges. The duffadars are responsible for their respective gangs, march them on to the work in the morning, and set them to work at once without any mustering or waste of time, the numbers are small and the duffadar at once sees he has so many men, women, and children, and puts down total number of each accordingly. The sub-overseer inspects each gang at any time afterwards, entering the numbers in this book. The gangs may be again counted and inspected at any uncertain period of the day by the sub-overseer, upper subordinate or officer in charge; and this is the only check on the numbers put down being actually on the work. The duffadars cannot admit any fresh people to their gangs after they have been counted, without the sub-overseer's order. In the afternoon, statement showing numbers of men, women, and children, in each gang, signed by the upper subordinates, should be sent in to the office, whence these should be handed over to the cashiers, who arrange the amount to be paid to each cooly on their tables, by gangs. When the work is over, the duffadars march their respective gangs to the pay tables, near which they arrange them, seated in regular order. On the duffadar's name being called, his gang files past the table, each cooly receiving his pay as he passes. If the numbers present in each gang do not agree with the statement a note is made and the matter is settled by the officer; no more are paid than are down in the statement, and as the money is arranged in accordance therewith any error is detected instantly. In this manner a very large number of people can be paid very rapidly. There is no necessity for any nominal rolls, which are utterly useless, waste an unlimited amount of time, and increase probability of fraud by necessitating a lot of mootsuddies to keep them. Under this system, if the officers and upper subordinates do their duty by keeping a sharp look-out on the sub-overseers, and by checking the gangs at unexpected times, there is not likely to be much fraud. The cashiers who pay the coolies have nothing else to do with them, and the officer generally and the upper subordinates always, should be present while the payments are being made

* Not more than one or two units at one time however.

I have above explained that nominal rolls are quite unnecessary and most objectionable. There is no object in issuing tickets, it is as easy to pay in cash. Tickets may, however, be issued with advantage when, owing to the people not feeding themselves properly, or otherwise, it may be considered desirable to pay them in grain. The ticket should then represent either the whole or a part of the coolie's pay, and should only be interchangeable at the rice stores, or at some special bazaar fixed upon, for a certain quantity of rice, &c. This is by far the best way of making payments in grain, and keeps the grain transactions entirely separate from the cooly management or payment which is desirable.

Ch. III. Qn. 7.

Mysore.

Question 8.—Prevention of Fraud.

Ch. III. Qn. 8.

What system do you recommend to prevent frauds by persons on the works, such as the receipt of wages by those who have not worked? What steps should be taken in the case of persons who have been absent at any of the roll-calls, or who have worked part of the day, but not all of it, or who, having worked during the day, are accidentally absent when wages are paid?

Punjab.—Persons absent to get no pay for period of absence.

North-Western Provinces.—

Bengal.—Similar.

Bombay.—11 answers same as North-Western Provinces Careful inspection of the muster rolls is recommended. Persons absent should be so marked, and paid afterwards.

Madras. — Fifteen gentlemen (Europeans) have replied to this question.

The system recommended is the careful organisation of gangs; regularity in keeping nominal rolls; muster of labourers three times a day, the intermediate roll call being at irregular intervals; making the whole gang the unit from which task-work is exacted, thus giving each member of it an interest in the sum to be paid to the gang; and in detecting and complaining of idlers.

PUNJAB.

Punjab.

Muhammad Hayat Khan.—In answer to question No. 7 I have explained what I considered the best way of making payment of wages. I think that if those suggestions are acted upon, there will be little chance left for the practice of fraud. When any person will not answer to the call of the muster-roll he will forfeit his wage. A person working a part of the day will receive so much wage as he will be entitled to. With a view to prevent fraud I would also suggest that a person accidentally absenting himself will not be entitled to any wages.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

Captain Marshall.—The system of payment on the spot before the people leave the works, as detailed in answer to the last question.

Mr. Colvin.—Strict measurement, and payment through the group foreman. We have no roll-calls, and persons absent at payment time recover from their foreman.

BOMBAY.

Bombay.

Mr. Hart.—In case of total or partial absenteeism the rule should be that pay should be cut proportionally if able-bodied, or otherwise if feeble they should be at once placed on subsistence allowance.

Accidental absentees should be paid under the usual unclaimed wages rules of the Department, a guarantee being taken from the petty officers that no fraudulent personation occurs.

Colonel Jenkin Jones.—The officer in charge and the inspecting officers should at irregular intervals have the muster-rolls called out before them and ascertain that the entries are correct. Persons who are absent at the roll-call are marked absent, and those who have worked part of a day, ½ or ¼, as the case may be. Persons who are accidentally absent on pay day are entered in the Unclaimed Wages Book, and paid afterwards in the presence of witnesses.

General Wilkins.—The usual system in force in the Public Works Department, where the square opposite each person's name is marked off in a systematic way at each roll-call, prevents fraud.

The adoption of a good ticket system would prevent fraud.

Persons accidentally absent can always obtain their back pay on claiming the same, as they are marked absent on the roll-calls on pay day.

Mr. Propert.—It is difficult to recommend any one system to prevent frauds. If possible, establishments should be so increased by means of additional employés that it may be found possible on large famine works to bring into force the various checks usually adopted by the Public Works Department at ordinary times. The cases mentioned in the latter portion of section 8 must be inquired into as they arise, and decided equitably by the officer in charge.

Mr. Norman.—The frauds referred to in this question can only be checked by repeatedly calling over the muster-rolls and noting the absentees. Labourers absent from roll-call must forfeit the whole or half a day's pay; in no other way can discipline be maintained. Any special cases of absence from accident should be reported to the officer in charge for orders.

Mr. Spry.—It is only by publicity of payment and frequently testing the rolls that frauds can be pre-

CH. III. QN. 8.

BOMBAY.

vented. If persons are absent at the roll-calls they are marked as such and paid accordingly. That they are not put down as present when really absent can only be checked by frequent and unexpected testing. When individuals are absent at the time of payment the power of paying them should not remain with the cashier. Such individuals should be required to attend the next day at a given time and place before the officer in charge of the work, or other superior officer. Their cases should then be inquired into and settled.

Mr. Moore.—It is difficult to prevent frauds of this nature if the overseers are corrupt. The overseer and the makadams of gangs should report all delinquents when payments are being made. Absentees through accident should be paid when they appear.

Colonel Anderson.—An essential point for preventing frauds is the frequent change of the karkoons and muccadums when immense numbers of labourers are engaged. I can imagine no system to provide for absentees from roll-call or for such as have worked part of a day; their payment will necessarily depend on the discretion or good-will of the muccadum, and it would as a rule be desirable not to recognize fractions of days.

Mr. Robertson.—If a person is absent at roll-call he would be entered in the muster-roll as absent, and receive no pay. If only present for half a day he would be so entered and only receive half day's wage. If absent when wages are being paid a note to that effect would be made, and he would be paid at the next pay day.

Mr. Bosanquet.—If work were paid by measurement, there need be little cause of anxiety about the improper obtaining of wages by persons who have not worked. If that were not found feasible the payment by gangs might be tried, payment being made to the persons selected by the members of each gang for the purpose. In the former case nothing would have to be done but to measure the work done and to pay for it accordingly. In the latter case trustworthy officers might occasionally in the course of the day be sent round to count the numbers in each gang. I believe Mr. Palliser, the Executive Engineer for Irrigation, had some system of dividing the people into gangs on the Gokak Canal and paying for work by measurement, and that the system answered well.

The Rev. C. Harding.—The great difficulty which Government had to contend with was the dishonesty of the lower native officials, village officers, people in charge of the relief-houses, &c. They robbed both Government and the people. About 25 officials were dismissed in this district. I think there would be great danger of dishonesty if relief were intrusted to the village patels, but the more European supervision there was the less would be the danger. I think that with a system under which efficient European officers could look after the village patels and ascertain from them who were in want, and supply them with food in their villages, there would be less mortality than there has been now under the system followed in the late famine. A small amount of relief given at home will do more to support people than a larger amount away from home. I decidedly hold that people should be kept at home if possible. On this system peculation would be inevitable in spite of all possible supervision, but in spite of that the relief would be more effective. The European officer might go round and visit every village in a week and distribute relief himself. In a great famine any form of economy is impossible without great loss of life.

MADRAS.

MADRAS.

Mr. Price.—I consider that the best means of preventing frauds of the kind mentioned is to have roll-calls, at the least three times a day, and to make that between the morning and evening muster at irregular hours, dealing severely with any cases of absence not satisfactorily accounted for. It was a very common trick for a man or woman to appear at morning roll-call, go off directly afterwards, and return in the evening to be paid. These persons were, of course, often detected by the second and unexpected muster. I found that paying the absentee for the day and deducting the amount of his wages from that of the head cooly, who ought to have looked after him, was a very efficacious remedy. To prevent personation, which was by no means uncommon, I would enter caste and age in the nominal rolls. I would call morning roll at a certain fixed hour, allow an hour's grace, and, after that had expired, admit no one for that day, and of course stop his or her pay; in the case of those absent at the day muster, I would allow no pay unless they were satisfactorily accounted for, and to those who were present at the two roll-calls, but not at the last, I would allow half a day. In the case of those who had done their full day's work, but who were accidentally absent when pay was disbursed, the rule observed by me was that they received it next day.

Mr. Oldham.—The best plan for preventing the receipt of wages by those who have not worked is to make the whole gang the unit from which taskwork is exacted, thus giving each member of it an interest in the sum to be paid the gang, and in detecting and complaining of idlers. In fining a gang for short work I used by preference to fine the men, as they were able to make the women and children work, apart from the fact that the women are, on relief-works, by far the most conscientious laborers.

The framing of rules regarding the treatment of absentees at roll-call or at paytime depends entirely on the amount of supervision available, and consequently the extent to which refinements of detail can be carried.

Major Ross Thompson.—The system of piece-work which I have advocated above obviates all danger of fraud to any appreciable extent.

MYSORE.

MYSORE.

Major Moncrieff.—I can give no general answer. Give me good and honest subordinates and fraud will not happen, give me bad ones and nothing will prevent it.

Colonel Johnson.—I have explained how fraud should be prevented. On piece-work, with decent supervision, there is very little room for it. Payment by daily hire, by considerably increasing the supervision, &c., &c., makes fraud easier. In the manner I have indicated above, however, with efficient and honest supervision, there could not be much. Without it it would of course exist.

People absent from roll calls who have worked part of the day, or are absent when wages are paid, should be struck out of the statement, each case being decided on its merits by the officer in charge.

QUESTION 9.—WAGES IN SICKNESS.

What wage should be given to those who are prevented from working by sickness; (1), when there is a hospital attached to the work; (2), when there is none?

Punjab.—Poor-house rates, half wages, cooked food.

North-Western Provinces.—Where there is a hospital, hospital diet; where none, subsistence allowance.

Bengal.—Ditto.

Bombay.—14 answers. General opinion that there should be hospitals on the works, with special diet. If no hospital, the opinions as to the pay to be given vary.

Madras.—Ten gentlemen (Europeans) have replied to this question.

The general opinion is that, as a rule, when there is a hospital on the work those who are prevented by sickness from working should be relegated to it, and receive only hospital diet until they are able to resume work. Where there is no hospital it is recommended in the case of trifling ailments that the labourers should continue to receive their pay for not more than three days, after which they should be forwarded to the nearest hospital. This plan is recommended by some even when there is a hospital attached, and the medical officer certifies that there is no need for the person being admitted as an in-patient.

PUNJAB.

Muhammad Hayat Khan.—Persons prevented from working by sickness will receive their food according to the scale laid down for the poor-house. If there be a hospital attached to the relief works he will be admitted in it, otherwise put in the poorhouse. From last year's experience I am of opinion that for a non-working man 12 chittaks of food will be sufficient, for a woman 8 chittaks, and for children 6 chittaks.

NORTH-WESTERN PROVINCES.

Captain Marshall.—When there is a hospital, hospital diet only.

When there is none I would give the subsistence wage in slight cases, and in all others remove the men to where the nearest hospital or relief camp may be.

BOMBAY.

Mr. Hewlett.—I think the sick should *not* be paid their wages whilst in hospital.

Mr. Hart.—Wages given in both cases should be mere subsistence allowance. I should make no distinction whether hospitals exist or not.

Colonel Jones.—(1.) When there is a hospital attached to the work the diet ordered by the medical officer should be given gratis.

(2.) When there is no hospital they should receive the usual working pay; but if they continue long sick they should be transferred to the nearest hospital.

General Wilkins.—No wages should be given to those who are prevented from working by sickness. They should be provided for in the field, or central hospital.

When there is no hospital the sick should be cared for in the nearest alms-house, and receive cooked food in lieu of wages.

Mr. Propert.—If there be a hospital attached to the work, patients should receive no pay, but cooked rations. If there be no hospital, half pay should be given to the sick.

Mr. Norman.—On works to which there is a hospital attached absentees from sickness must be placed on a separate list and fed under the doctor's orders. On works to which no doctor is attached the sick must be kept at a small relief camp or poor-house in the rear and fed on cooked food.

Mr. Spry.—Those prevented from working by sickness should, when admitted into hospital, be fed and not paid. Till they can be sent to hospital they must be paid at Civil Agency rates.

Mr. Charles.—When there is a hospital attached to the work, those who are prevented from working by sickness should get no wage, if their dieting is undertaken by the hospital. If it be not, or if there be no hospital, I think their wage should be the same as if they were working, as the assumption as to the famine wage is that it is the lowest on which health can be kept up.

Mr. Moore.—I would give no wage when there is a hospital; the people should be fed free. When there is no hospital the wage should be paid as usual, but a responsible officer should visit the sick daily, and satisfy himself that there is no malingering.

Mr. Hamilton.—There ought to be hospitals within access of every large work. Inmates should be fed gratis and receive no wages.

Mr. Percival.—It should be left to the doctor to decide what should be given to the sick, and there should always be a hospital. This furnishes an additional argument against small works,

Colonel Anderson.—Civil relief wages should be given when there is a hospital, with any addition required by medical authority when there is one to order it, which, of course, he would do under due restrictions. Sick people duly passed as such should get Sunday's wages. All people seriously ill, or for more than a few days, should be sent to a hospital, which should always be in the vicinity of a large work.

Mr. Robertson.—In Government Resolution No. $\frac{98\ E}{348}$, of 13th February 1877, Government approved of the Superintending Engineer's instructions to the Executive Engineer, Belgaum, and ordered them to have general application in all the famine districts. These orders were, that sufficient subsistence should be provided to the sick employed on

CH. III. QN. 9.

BOMBAY.

relief works (1) who remained under the medical attendant at the works, or (2) who, when there was no medical attendant, remained in his hut.

Mr. Bosanquet.—Such people, when in hospital, should be given the food certified as necessary by the senior medical officer present. If there is no hospital, and therefore no medical officer, they should receive the allowance of food given in the relief-house in the neighbourhood.

MADRAS.

MADRAS.

Mr. Knox.—If there was a hospital on the works any person prevented from working on account of sickness should be sent to it, and while under treatment should receive no wages, but should be dieted under the orders of the medical officer. While in this hospital his name should be kept on the roll and his expenses charged to the work. A sick person should not be allowed to remain here more than a few days, a week at most, but should then if not recovered be taken to the nearest large hospital or camp, his name being then struck off the roll.

Mr. Price.—I would give no wages to the sick when there is a hospital attached to a work. I would make them go on to the hospital strength and diet them there until fit to go out to work. When there is no hospital I would allow the coolies, if found to be really sick, and if they remained on the works, their pay until they could be sent to the nearest poor-house for treatment; but if they left and went to their villages, I would stop it altogether. There would of course be cases of the latter class in which hardship might be occasioned, but unless considerable strictness was exercised, and quitting the works was made punishable by complete stoppage of pay, there would be no keeping the coolies together.

Mr. Grose.—When there is a hospital attached to the work sick paupers should be supplied with food there, and paid no wages. If there is no hospital the wages in so far as they are subsistence wages ought to be continued, but to prevent paupers from malingering, they will have to be slightly reduced, say, by the amount of the fine inflicted for under-work.

MYSORE.

MYSORE.

Major Moncrieff.—The sick, whether in hospital or not, had better be fed with cooked food, not paid at all.

Colonel Johnson.—In hospital a man should be fed simply and get no pay, and there should be a hospital shed on every work.

CH. III. QN. 10.

QUESTION 10.—THE LABOUR TEST.

What are the principal descriptions of work on which fixed daily tasks are applicable, and what tasks have been insisted on? How are the labourers classified according to their physique; by whom and in how many classes? What steps are taken for raising labourers from one class to another, according as their physique improves, or vice versâ? How are they ganged, and into how large gangs? How is their work measured up; by whom, and how often? How are they punished for not completing their tasks? What steps should be taken to test the report of the measuring official, to secure that the labourers are justly punished or deservedly paid in full? What steps are necessary to compel persons receiving relief to work? In those sorts of work on which it is impossible to apply the task test, what test can be applied to ensure that the labourers earn their wage properly?

Punjab.—Earth-work. People in two classes, with able-bodied gang besides.

North-Western Provinces. — Earth-work. The labourers classed as efficient and inefficient. Those too weak for work sent to the poor-house. The labourers were divided into gangs of various strength, and various tasks required.

Bengal.—Works on fixed daily tasks defined as in Bombay. There may be two classes: (1) on piece-work or task-work, (2) on subsistence wage.

Bombay.—9 answers. Purport: Excavating, embanking, metal-breaking are the kinds of work. The tasks were 75 per cent. of individual capacity on P. W. D. works, and 50 per cent. on civil works. The labourers were classed generally in two classes by physique by the medical and civil officers. The gangs were from 50 to 200. The work was measured by overseers every evening. P. W. D. labourers were fined by reduction to civil agency wage. Labourers on the latter wage cannot be punished by fine.

Madras.—The principal descriptions of work to which the system of fixed daily task is applicable are: excavating, carrying, and filling of earth-work; stone breaking; spreading, rolling, and ramming of road material. The tasks generally insisted on have been from 50 to 75 per cent. of the out-turn ordinarily required by the Public Works Department, a higher rate of pay being given for the latter. Colonel Prendergast states that his experience is that the people prefer the full task, and try to come on the higher rate of pay as their physique improves.

PUNJAB.

PUNJAB.

Muhammad Hayat Khan.—In his district there were no works on which fixed daily tasks were made applicable. Ordinarily the work of digging and spreading earth was assigned to the afflicted people. The amount of work performed was regulated according to the physique of the labourer. In my opinion a gang should consist of more than a hundred men. The duty of measuring works should, as far as possible, be entrusted to the Officers of the Public Works Department. When any person is found not to perform the full amount of work assigned to him, his wage should be cut. The report of the officer entrusted with the work of measurement will be compared with the entries in the Civil Officer's register of works. The officer in charge of a gang should occasionally examine the work. I cannot recommend any other punishment for not doing the day's work than that of "short diet," which will no doubt compel the labourer to perform the full amount of work. Care should, however, be taken that the people are not pressed to do more work than they can be expected to perform, and which will not prove prejudicial to their health. The duty of fixing task work according to the physique of each person is indeed a delicate one, and Civil Officers should pay particular attention to this, otherwise it will complicate matters.

Colonel Parsons.—Road and other earth-work provide employment suitable for fixed daily tasks; in road works labourers of diminished strength are required to do top dressing and ramming, which are less laborious than digging and throwing earth. (*b.*) Two classes only are formed,—labourers equal to ordinary work, and those of reduced or inferior capabilities. (*c.*) When the working powers of any of the labourers are improved sufficiently to enable them to work fully, they commence doing piece-work, at which they can earn more than at fixed wage; the classes being in fact workers on fixed wage, and at piece-work respectively. (*d.*) The gangs are not of fixed numbers, but according to circumstances, with reference to number of men at the works. (*e.*) Work is measured up in the evening. (*f.*) Labourers wilfully shirking work get reduced wage. (*g.*) The official superintending the work is required to secure that abuses in this matter are not practised. (*h.*) The only steps to compel work of capables is to refuse relief, otherwise in this matter care is necessary to see that there is no misunderstanding prevailing, as all persons put down as recusant may not be so in reality, particularly in the case of distressed strangers. (*i.*) In works where task test is impracticable, close supervision is necessary to ensure that wages are earned.

Mr. Nicholl.—The Labour Test.—Fixed daily tasks are applicable on earthwork; the labourers are formed into two classes, the able-bodied to dig, and the less robust, women and children, to carry baskets. For hard soil, gangs of able-bodied, picked men are employed separately. Each gang has a piece of work marked off daily, and if this is not completed the mate is fined, or the labourers receive a reduced wage for that day.

Persons may be compelled to work by reducing their wages to the lowest possible limit. At the beginning of a famine it is hard to compel people to do what they have no inclination to do. When punishment is resorted to, they leave and seek work elsewhere. When famine is at its height, and other work is not procurable, labourers are then more tractable; for those who persist in not fulfilling their task, confinement on a low diet might, with advantage, be resorted to.

NORTH-WESTERN PROVINCES.

Captain Home.—Excavation is the only work on which I have seen fixed tasks applied; our task in the Bulandshahr Branch in 1861 was 150 cubic feet.

We did not class our labourers on the excavation, but sent the weakest into the poor-house, and put the fairly strong on to clearing jungle, hutting, and dressing earthwork; they were gradually drafted on to excavation as they got stronger.

They were ganged as far as possible by villages, about 40 to a gang under a mate, with a muharrir and mistri over 15 to 20 gangs.

The work was marked out into tasks every morning by the muharrir and mistri, and inspected every evening before payment was made. The work done each day was reported the next morning with the account of payments, and the measurements were checked by the Assistant Engineer in charge when a furlong had been completed. Short work was punished by short payments.

The Assistant Engineer was on the works morning and evening, and took notice of all complaints. As previously stated (para. 7), the Assistant Engineer, when the work was first started, made all payments himself, and thus established a system which the labourers soon came to understand and to appreciate.

This is a very important point, and in order to attain it, labourers should not be sent to the works in excessive numbers in the first instance.

People who would not work would not have been paid, but no instance of the kind is remembered.

Where no test can be applied, extra supervision would be required to ensure their doing a full day's work.

Mr. Colvin.—No task has been insisted on; the average per head of 35 cubic feet earned enough for 10 chittacks flour, and 3 or 4 pies over. It was open to labourers to do more or less as they could. Few did less; for strong men were not allowed to group together to the exclusion of weak, weak and strong being mixed in groups of 30 by the officers in charge. Inefficient gangs have only been introduced at a late stage of the famine here, and people are drafted out of them as quickly as possible. They are mere sinks of indolence and malingering, as a rule. The other questions have been answered above.

Mr. Sandys.—All the labourers employed on relief works in this district have been doing earthwork.

Where the digging is of ordinary difficulty and the lead does not exceed one chain, an able-bodied gang of six men, six women, and six children are required to do about 900 cubic feet of earthwork.

The labourers are classified into efficient and inefficient gangs, and those who are too weak to work are sent to the poor-house.

The classification of new arrivals is made every morning by the Engineer Officer in charge, who also transfers those from the inefficient gangs, who have improved in health and physique, to the efficient gangs.

The labourers are generally divided into gangs of 18, each gang consisting of six men, six women, and six children.

The munshis and sub-overseers measure up the work of each gang daily, and these measurements are checked by the Engineer Officer in charge of the work.

Till the receipt of Government Order No. 1933A, dated 6th July, 1878, all the labourers were paid at a uniform rate, but now those efficient gangs that do a full task get slightly better wages according to the scale laid down in the above Government Order.

The Engineer Officer in charge should test measurements himself, and see that the labourers are deservedly paid in full or not.

To give those who do a full task a higher rate of wage, giving a bare subsistence wage to those who do not complete their tasks.

The task test could not be exacted from the inefficient gangs; it must be left to the Engineer Officer in charge to obtain what he considers a fair amount of work from them.

Mr. Tracy.—The only description of relief works in this district has been earthwork. The tasks insisted on have been 80 cubic feet for a man, 40 cubic feet for a woman, and 15 to 20 cubic feet for a child over ten. The labourers are classified by the officer in charge in two classes: 1, able-bodied, and 2, inefficient. The inefficient receive tickets, the able-bodied are made to do task work. The labourers are ganged by hundreds, each hundred being in charge of a mate. The work is measured up every evening by native supervisors. Short work is punished by payment at a reduced scale as laid down in para. 8, Chapter I. of the North-Western Provinces' Famine Circular.

The only steps which can be taken to test measurements or to secure that labourers are justly punished or deservedly paid in full is frequent supervision by the officer in charge. People refusing to work are not relieved; those who do short work are paid in proportion. I have no experience of such works.

Colonel Burn.—Piece-work, in my opinion, is the best way to meet this difficulty; fix a fair rate for a full job, and lower said rate by sliding scale till it meets the capacity of the feeblest *from whom any* work should be exacted. Such rates should be fixed beforehand and printed, and, when the work is commenced, tables of the rates in vernacular be stuck up about the work, and those offering be allowed to try whichever scale they believe themselves equal to. I leave replies as to measurements to those accustomed to superintend such work. No punishments beyond refusing to pay for work not done.

Mr. Magrath.—Fixed daily tasks are wholly inapplicable to famine in any stage. It is impossible roughly to estimate how much a man can do until he gets into health, and then he is no more a famine subject. The only thing that can be done is to see that folks do not idle. Men who come for work early in scarcity, like the professional beldars and the artisans, should be assigned work to do and be paid for what they do. Throughout the famine of 1874 we had beldars, tantees, cotton-spinners, and the like, working for a very little above the ordinary wages, that little being due to the higher rate of food. But these men are not to be placed in the same category with starving agriculturists or town labourers. I only saw the classification according to physique tried once, and of course it turned out to be perfectly illusory. As appearances are most deceptive and are no guide to what a man may do, classification of labourers I believe to be cumbrous in execution and requiring a large staff. Gangs should be told off, and rough estimate should be made as to what they can do in a week. If it is found that they really cannot do it, the estimate should be reduced. If it appears that they are idle, they should be turned off the particular work in which they are, and sent as a penal gang to the civil officer to do coolies' work where he requires it, and where they will be under the immediate supervision of a task-master. We made up gangs of 20, including women and children, which answered very well as it included three or four families. Measurement is very costly for the large staff it requires and the accounts required to be kept. It also prevents the men being paid daily, as daily measurement of all tasks is impossible. The roads made by measurement were all of them of a very inferior description, pits being dug all about the place to enable each family to get its payment separately. Gangs of professional beldars of course can be, and ought to be, so employed, but it is useless to suppose that the plan will work for a mixed crowd. When you fix the rate high, the stronger men will get more than they should do; whilst if you fix the rate low, the weaker men will be starved. I never found any difficulty in getting the labourers to work. Of course, if they will not work they should not be paid, but a penal gang is always practicable. I had to put the lazy to unloading transport trains, loading up golahs under supervision. Until they did their day's work they were not paid. Under these circumstances I have had the men set to work at 5 o'clock in the morning, and finish a hard day's work by 1 o'clock, knowing that they would be paid and could go home as soon as the day's work was done.

Captain May.—Fixed daily tasks are applicable to earthwork on canals, embankments, roads, collection and breaking of road metal, moulding bricks, and pounding soorkee. Earthwork was chiefly done here, but no fixed task was insisted on because it was not permitted; work was started on the piece-work system but was stopped. The daily wage system was substituted, and subsequently piece-work was introduced when the labourers were classified, according to their physical capacity, by the subordinate and mate in charge of the work into classes—

I.—Those desirous of doing piece-work and to receive payment according to the quantity of work done and the rate fixed per 1,000 cubic feet of earthwork.

II.—Those who receive a bare subsistence for whatever work they could perform.

When labourers of the second class are fit to perform piece-work the only step necessary is to allow them to join gangs and earn what they can, and those who become unfit to work at all are transferred to relief-houses. In carrying out piece-work I have found best to lay out work and allow them to work in family gangs, and when their work is measured up, and payment made to the headman of the gang, they divide it among themselves. Piece-workers punish themselves for short work, but those on subsistence wages cannot be punished or retrenched for short work without starving them. All that can be expected is to prevent deliberate idleness, and to have those who are unable to do any work transferred to the nearest relief-house. The measurements of the subordinates in charge should be checked by the Assistant Engineer in charge of the subdivision, and when necessary by the Executive Engineer. Those who are unable and won't work should be turned off. Proper supervision on the part of the mates of gangs should ensure work from those on subsistence wages.

Mr. Finucane.—The only relief works of which I have had experience are roads and tanks. I think task-work applicable to both.

The task insisted on was 75 cubic feet of earth to be cut and put on the road in clayey soil, and 100 cubic feet in sandy soil.

An able-bodied man performing this task drew two and a half annas per day. This same task was exacted from two grown-up and from three younger boys. Very young boys or girls were not allowed to work at all.

Able-bodied men, who alleged they were unable to perform the full task, were allowed to get the younger members of their families to assist them, the wage fixed for the full task (2½ annas) being given to one only, and the family members being allowed to make their own arrangements for its division among themselves.

Those who were physically unfit for task-work were employed in smoothing the surface of the road, and were paid a bare subsistence allowance of from four to six pice per day. The circle officer examined these light-labour gangs from time to time, and turned off to task-work anybody who seemed manifestly able to do task-work. On the other hand, people who looked physically weak and unfit for task-work were always allowed to leave the "light labour" and join the task-work gangs if they volunteered to do so.

The labourers were arranged in gangs of fifty. Each gang would consist, as nearly as practicable, of residents of the same village, headed by a gangman, who was ordinarily the village mandal (headman) or some person of that kind known to, and trusted by, the villagers.

Over four or five of these gangs there was a mohurir or sub-overseer whose duty it was to keep nominal rolls and see that as many tasks were performed as there were multiples of two and a half annas charged This duty was really very simple. Taking the gang as a unit and the allotted task, say 100 feet of earthwork, each gangman would arrange his 50 men, 25 on either side of that part of the road assigned him, would measure off with a bamboo pole 10 feet in length and 10 feet in breadth for each man, and direct him to dig out his allotment to the depth of one foot. The most ignorant cultivators very soon come to know the exact size of the allotted task, and fall into work without confusion or trouble *if only* task-work is insisted on from the beginning. The next gang would be similarly arranged at some distance from the

first gang, and so on. On this plan there is no need to measure up every "task." It would be quite enough for the mohurir or supervising officer to ride along the road after the day's work was done, to make every man stand in his *chowka* or task, and to measure up a *chowka* here and there. One *chowka* may be a little more, and another a little less, than the full task; but the eye would very soon become so accustomed to the exact size of the full *chowka* that short work could be detected without minute and elaborate measurements. In cases where the full task was not performed, I would allow the wage for a half task only, and would not attempt to apportion out the exact wage due for the exact number of cubic feet dug. If any individual or any particular gang persisted in doing short work, I would either turn such persons off altogether, or put them on the barest subsistence allowance.

Mr. Kisch.—Avoid all classification of this kind as long as possible.

If works are opened in time, there should during the whole famine be very few who cannot do 75 per cent. of a Public Works task and who are fit for work at all. When it is absolutely necessary to have two classes of labourers of different physique, the division should be made by the chief executive officer of the division or circle. Under no circumstances should there be more than two classes of relief labourers—those doing 50 per cent. of a Public Works task and those doing 75 per cent. of a Public Works task. On the same work there should never be two classes of labourers paid according to different scales.

BOMBAY.

Mr. Hewlett.—I wish to say that I think labour, such as earthwork, should not be enforced in regard to some of the artisan class, such as tailors, weavers, &c. I have seen women of this class employed on work which they manifestly were most unfitted for. It is, in my opinion, very desirable that work suitable to them should be found, and I think weaving, at all events, might be allotted at relief works to such people in lieu of earthwork.

Mr. Hart.—Daily tasks are particularly applicable on earthworks and metal-breaking; also in some cases on masonry.

The tasks insisted on varied with the class of persons and character of work, but as a rule seventy-five per cent. of the capability of ordinary work-people at ordinary times was insisted on as a famine labour test, and the basis of an ordinary task system was that for a lift of less than four feet, and a lead of less than fifty feet, a man, a woman, and a child could excavate and dispose of one hundred cubic feet of earth.

The work was measured by overseers and sub-overseers every evening.

The pay of the work-people was cut in proportion as they individually fell short of task.

Close supervision and personal superintendence by superior officers, and the usual departmental checks of measurements, are all that are necessary to ensure correct payments to the people.

Colonel Jones.—Earthwork, such as road, railway, and canal cuttings, embankments, and earthen dams.

Where 100 cubic feet would be exacted in ordinary times, 75 cubic feet was taken on a relief work under the Public Works.

The labourers were divided by the district officers into four classes:—

1. Able-bodied people.
2. Weakly people, but capable of being moved to a distance from their homes.
3. Ditto, not fit to leave the neighbourhood of their villages.
4. The blind and infirm who have no one to support them.

The 1st class were sent to the Public Works Department;

The 2nd class to Civil Works;

The 3rd class employed on trifling works near their villages;

And the 4th class supported by the Government.

When labourers in class 2 were considered fit for the 1st class, they were sent to the Public Works Department, and, on the other hand, unfits were sent back from the 1st to 2nd class.

They were divided into gangs varying from 50 to 70, under a muccadum.

The work was measured by the subordinates employed on the works daily, and checked by the Executive Engineer or his assistants at convenient times.

The labourers were fined in proportion to their shortcomings, and ¼ or ½ day entered in the muster-roll.

General Wilkins.—All descriptions of earthworks are suitable for daily task work, such as—

1. Tank excavations.
2. Formation of tank embankments.
3. Road cuttings and embankments.
4. Railway ditto.
5. Preparation of road materials.
6. Road repairs of all kinds, and other similar work.

The tasks insisted on have been 75 per cent. of a normal task for the able-bodied and 50 per cent. for the less able-bodied. Task work has been required on all works with more or less exactitude according to the establishments available. The labourers have been classified on the works by the European members of the staff chiefly, and by the overseers in charge of works.

The order of Government was that all people on public works were to be tasked 75 per cent. according to their individual capacity. Some officers divided their people into three classes, but as a general rule they were divided into two classes. The weakest class was set to carrying work, and the strongest to excavating. The people were divided into gangs, and their tasks set them in the morning. Whole gangs, not individuals, were fined for short work.

The working parties varied from 40 to 200 individuals, but the usual strength of the working parties was from 40 to 60 persons.

The work done was measured daily by karkoons and maistris. The overseers also measured work, and the officers checked the measurements from time to time.

Mr. Propert. — This is a question more easily answerable by an officer of the Public Works Department. I perceive that the question regarding the propriety of having a civil officer attached to large relief works is alluded to in para. 20. I will not therefore discuss it here, although in disposing of the question of "labour test" I consider that the assistance of a civil and perhaps also a medical officer is required.

It is of course idle to suppose that on a very large relief work it will be ever possible to carry out *fully* the hard and fast rules of the Public Works Department, but I do say that as far as possible they should be followed, and if sufficient departmental establishment be provided, assisted by a civil officer and a medical subordinate, I consider that a fair amount of labour may be obtained at a moderate cost. I cannot, from want of experience, satisfactorily answer the *details* of the present question. I can only advise as close an adherence to Public Works Department rules as circumstances will allow. If people refuse to work, I can really recommend no other course than the stoppage of wages.

Ch III. Qn. 10.

Bombay.

Mr. Spry.—Excavating, embanking, and metalling are, I believe, the principal descriptions of work on which fixed daily tasks are applicable. The maximum task on the Public Works Department works was 75 cubic feet per diem. As regards Civil Agency works, 50 cubic feet was the maximum, but as a matter of fact the condition of the gangs taken as a body was so bad that very little real task work could be exacted. The task became more one of time than of quantity done.

When applicants came they were inspected by the officers in charge of the works and the civil officers, and if possible by a medical officer, and then they were drafted off according to individual capacity to either Public Works Department works or Civil Agency. Then again they were subdivided according to their condition. All working gangs again were continually inspected and individuals raised or lowered as appeared necessary. As people came they were ganged off into gangs of 50 each. The work is measured up every day by the overseer, or rather it should be if practicable. The punishment for not completing the task is reduction of the wage to Civil Agency rates on Public Works Department works; on Civil Agency works such reduction cannot be made with safety, and the only thing to do is to insist on a time test. The overseers' reports and measurements should be frequently tested by the officer in charge of the work or by some special officer.

If cuttings have no effect on individuals who are incorrigibly idle, the only thing to do is to turn them off the works for a time at least.

Where task tests cannot be applied, strict time tests must be exacted.

Mr. Hamilton.—I look upon all classification of labourers as a mistake: it cannot be done satisfactorily, and the good results are, in my opinion, *nil*. Parties consisting of a family or two families of a village should be allowed to work together and have their work measured up once a week by a European.

If necessary, three or four neighbouring parties may be put under one mukadam, whose business it is to arrange that food can be easily purchased, and who frequently advances small sums to those who come on the works without enough to carry them on till pay day.

Individual task test, or indeed any other task test, I think is a mistake, and if properly carried out an enormous supervising establishment would be necessary. Let each party have its own excavation for earthwork, and the wages paid to each family would depend on the work done by that family party. In such cases the strong work with the weak, and no fear of lazy labourers need be felt. Any system of trying to compel people to work must fail where perhaps forty or fifty thousand people are on one large work.

Mr. Burke.—There were three classes of labourers —(1) the able-bodied, who did tasks of 75 per cent. of what would be expected in ordinary times; (2) the class who did about 50 per cent.; (3) the special gangs, who were newcomers or weakly and emaciated, but who were not fit subjects for the hospital, and these were not tasked. From able-bodied people the full task was exacted and their pay was cut in the full proportion of their shortcomings; from the second class a maximum of only one-fourth of their daily pay was cut, bringing it down to Civil wage. I was satisfied with the wage, and thought it enough and not too much; at the same time, I had heard and believe that some of the labourers saved a portion of their wages while on the work. The expenditure on the Ashti tank work was Rs. 3,09,595 to 31st March 1878, of which the actual value was Rs. 1,63,176. But the work closed at the end of November 1877, and a small portion of the expenditure under actual value was incurred from then up to the 31st March 1878.

If I had worked at piece-work instead of task-work, the expenditure would have been much larger, because the able-bodied people would have done much more work. Many of the able-bodied finished their tasks by 4 p.m., and could have done a full task instead of 75 per cent. Government, as I understand the question, did not want to get as much done as possible, and to pay accordingly, but to limit the total expenditure to the smallest possible and to obtain a fair return of work for the expenditure. Instead of getting a full day's work for a full day's wage of ordinary times, we got from the able-bodied three-fourths of a day's work for two-thirds of a day's usual wage. I don't think it would be possible to apply piece-work to weaker gangs, because of the difficulty of graduating the piece-work exactly according to the strength of each individual.

Madras.

MADRAS.

Mr. Price.—Excavating gravel, spreading and tamping earthwork, and collecting and breaking metal are the principal classes of works to which tasking is applicable. In this district tasking appears never to have been attempted. In Bellary and Cuddapah it was, and a scale was drawn up there by me. My system of tasking was per gang of fifty persons composed of 20 men, 20 women, and 10 children, and allowance made in fixing the task for the gang containing persons in good, indifferent, and bad condition. Subsequently when the famine grew worse we found the state of the gangs such that they could not perform the tasks imposed, and we had therefore to divide into light-work gangs which had no regular task, and ordinary gangs made up of the strongest, who still had to turn out the usual task. There were only the two classes, and the classification was made by the European officers. This classification is not to be confounded with that made when examining into the physique of laborers on works, in view to a special periodical report for which Government called. When these latter classes were five, viz., "good," "fair," "indifferent," "bad" and "very bad," "good" and "fair" formed one set of workers, "indifferent" and "bad" the other, and the "very bad" were sent to the poor-house.

The coolies were frequently mustered and examined by the officers in charge, and transfers from time to time made. My system was to gang the fifty people previously mentioned under a head cooly, then to place eight such gangs under a head maistry, three of such gangs under a maistry and to put a party of 4,000 under a superintendent, he having, when this number was exceeded, an assistant superintendent. In Bellary, where I had a good staff, I measured up every day before the coolies were paid. In Cuddapah this was done as often as possible, but we had so very few hands and so many coolies that to turn out anything regular was simply impossible. In Bellary I used to strike off quarter and half-a-day's pay when only three-quarter or half-a-day's work was done, and when under half was turned out, the coolies concerned got nothing. After a fortnight of this system they gave little or no trouble. It was however put a stop to by Government when the one pound of rice wage came into force, and we were permitted to fine only up to the extent of condiment allowance, and then not more frequently than for a fixed number of days.

The only way to test the reports of measuring officials is to take check measurements oneself, or to have them taken.

As regards enforcing work, I would certainly carry out the system which we had in Bellary; it may appear severe, but half measures are not advisable when one has to deal with large bodies of people. Where

persons who are strong enough and able to turn out a definite and easy task deliberately neglect to perform it, they should suffer in a way which they can appreciably feel the effects of doing so. If they do not care to exert themselves in the very moderate degree which will ensure their obtaining their wages, the conclusion to be fairly drawn is that they do not require them. I cannot say what test, other than the task test, when that is inapplicable, could be employed. The Department of Public Works, where work which cannot be tasked is dealt with, have certain scales by which they calculate and these could, I presume, be used in the case of famine works.

Mr. Grose.—Works to which the work-test cannot be employed should not be made relief works.

Mr. Longley.—Daily task is most easily applied to earthwork.

The tasks in the earlier part of the famine were light, and were not uniformly enforced. Since the Government Order of the 24th September they have been gradually raised for able-bodied coolies to a full task.

Laborers have only been divided into two classes—those able-bodied and the reverse. The classification was partly made by the civil officers, who, in sending coolies to the Public Works Department, sent them to professional agency works if able-bodied, and to civil agency works if not able-bodied, but the Department Public Works officers have again reclassed them remitting some to civil agency from professional agency works, and sometimes setting aside on professional agency works a section for those not able-bodied.

If any steps were taken for raising laborers from one class to another, this was done by the Department Public Works officers, but I doubt if this was ever done systematically, and the tendency has been either to laxness in permitting the employment on civil agency works of able-bodied coolies or to over-severity by exacting a full task from all irrespective of strength.

Coolies were punished for not completing their tasks by only getting civil agency rates.

I cannot conceive any form of relief-work which it is impossible to measure and so apply the task test, but, if it should happen that there is such a work, daily wage must be paid.

Mr. Jones.—Earthwork in road-making and picking and breaking stones for metalling roads have been the descriptions of work on which daily tasks have been enforced. Not less than 50 per cent. of the work which at the Department of Public Works valuation would be an equivalent for the day's wages has been the task insisted on. The able-bodied have been set to work averaging 75 per cent. of the full task, while the weaker have had only 50 per cent. to do. The gang maistries have in the first instance picked out and arranged the laborers, and their classification has been checked and revised by the superior officers in charge of the work. Each gang consisted of twenty-four coolies and a maistry or head cooly. Each gang had a furlong, and over each mile or eight gangs there was a mile maistry, who measured up the work daily with the help of the gang maistries. The sub-overseer in charge of the road tested the measurements of the mile maistries daily.

Mr. Oldham.—The labor test.—The principal description of works on which fixed daily tasks are applicable are earthwork, stone-breaking, collecting stones, excavating and stacking metal, laying metal, tamping metal and carrying water, making mud and stone walls.

I used to classify laborers by physique as—first, those able for full work; second, those able for half-work; and third, inefficients. Full work meant an ordinary laborer's work in ordinary times. The classification was made by eye, with a special allowance for weavers. Having instructed my subordinates in its principles I left them to make it, and also left them to transfer individuals from class to class as their condition improved and *vice versâ*. Of course the superior officers watched their action. The Public Works Department officers pursued the same system.

The most manageable gang is one of fifty persons under a head laborer or gangsman who must be a working-man; not as was so generally the case in this presidency, a well-clothed official of the peon class armed with a stick. This gang with such a gangsman is the best unit for work. In Adoni last year five of these gangs were as much as a gang-writer could manage. In Chumparun, in 1874, one gang-writer or "haziri navis" managed ten or more gangs so constituted with ease. The gang ordinarily consisted of ten men, twenty-five women, and the rest children. Sometimes there were fifteen men to twenty women or similar intermediate variations.

The laborers are punished for short work by fines. As stated above, if the lowest fine was inflicted, I imposed it on the men only. If the whole gang had to be fined I used to fine the men twice as much as the women. If there are ten men in a gang of fifty people they can not only work themselves but make the women and children work too.

Major Ross.—Earth-work (digging by men and carrying by the women and children) and metal collecting and breaking. The proper task is never done; all the coolies know that they can, under no circumstances, be paid less than the civil agency rates; they consequently do as little as they possibly can.

The laborers are divided into two classes decided by the divisional or taluk officers. The engineer in charge may, if he thinks fit, raise a civil agency cooly to professional agency work, but the *vice versâ* arrangement is by the last order placed in the hands of the relief officer.

The laborers are ganged according to the nature of the work to be performed; if for earth-work, there must be a proper proportion of men for digging to the number of women and children for carrying; if for metal collecting and breaking, women and children alone are sufficient.

The numbers in a gang, of course, vary very much according to the work they are employed on, but 100 is about as many as a maistry can properly look after.

Lieut.-Colonel Prendergast.—Daily tasks are applicable to excavation of earth, sand, gravel, &c., including the carrying of the material away, either to be placed in position on a bund, line of road, to fill up hollows, or to be merely thrown away at a certain distance. Stone is collected and broken for roads, also gravel stored at road-side and laid down, water is brought and the road tamped. The tasks are fixed, according to the nature of soil excavated, the distance of conveyance of material, and the cubic or superficial quantity of work done, with reference to the task that a laborer would have set to him, in ordinary times, to earn a fair day's pay. There are only two classes of tasks: for the able-bodied and for the weak. My experience is, that the people have preferred the full task, and try to come on the higher rate of pay, as their physique improves. Those found incapable must be put on the reduced wages for lighter labor. The people are formed into gangs of twenty to thirty. The work is measured by the maistry after the day's work, or in the morning before the people begin again. If tasks are not completed, the gang is fined proportionally to the deficiency, provided that not less than civil agency rates are given. Nothing can be done beyond the check by a superior official to see that the measuring maistry has given proper credit for work done. We can only watch persons when put to work, to see if they really are unfit for it, or if they are deserving of relief

CH. III. QN. 10.

MADRAS.

without work: and without a task, in the same way, it is only by careful supervision that wages can be properly earned.

Captain Awdry.—Under orders received the strong and feeble have been mixed up together in one gang; I do not consider this system good as it demoralises the strong coolies. I would put strong and weak into separate gangs by the Public Works officers, who should pay the weakly gangs according to their *ability*, but *insist* on *full* outturn from the strong. The few who are absolutely lame, deformed, or decrepit should be classed as civil agency coolies by the civil relief officer on his inspection of the gangs, and should be made to work as much as they can, but this usually is practically found to be very little, and I consider that it would be better not to have such coolies on works under the Public Works Department at all. They should do the works of camps or sanitary work about villages.

Major Ross-Thompson.—When working a large body of people with a limited staff for supervision, *individual* task system is impracticable, and should not be attempted. With the piece-work system, the difficulties anticipated in this Query 10 would not arise.

Captain Morris.—The standard task insisted on in this district was four cubic yards of excavation per man in moderately easy soil, the proportion of women and children to each excavator being regulated by the lead.

It is hardly possible to divide the laborers into more than two classes for employment under Revenue and Public Works Departments' supervision, respectively. Even this classification involves a good deal of care and trouble. Those employed on civil agency works should be frequently inspected by a competent medical subordinate, and those who are sufficiently improved in physique can then be drafted to the works under professional supervision from time to time.

Mr. Russell.—The principle of setting fixed daily tasks can be applied to all descriptions of work, such as earth-work, road-work, &c. It is, however, most advantageously employed where the work is of a mixed description. From September 1877 to March 1878 tasks were entirely measured by "ability," professional agency coolies being required to do up to 75 per cent. of their ability, and civil agency coolies 50 per cent. of their ability. Since March 1878 a full normal task has been required from each individual on professional agency works, the civil agency task being, as formerly, measured by "ability," but being raised to 75 per cent. instead of 50 per cent.

There are only two main classes into which laborers are divided, viz., the civil and professional agency classes. The stronger men on a professional agency work are, however, employed solely on the hardest descriptions of work, such as in road-work, tamping with heavy iron rammers, or in earth-work digging. The weaker are employed on somewhat lighter work, while the women, children, and civil agency coolies are employed upon the lightest description of work, which, generally speaking, would be the carrying of earth or other materials. In this way the laborers are practically sub-divided into any number of classes according to the nature of the work.

Laborers are put into gangs of 50 strong, and people belonging to the same family, or coming from the same village, are invariably ganged together.

The work done by a gang is measured daily by the maistry in charge of the gang, the measurements are checked on the same day by the sub-overseers, and again checked by the overseer when he makes payments to the gang. The original measurements taken by the maistry and countersigned by the sub-overseer and overseer are filed, and can at any time be checked by the officer in charge of the work. I know of no method to compel people to work, except a rigidly strict system of turning off the work all such people who do not do the work, which, from their general appearance and condition, might reasonably be expected from them. Even when this system is strictly enforced, it is a long time before the majority of the workers will take the warning which it is intended to convey.

On work on which it is impossible to apply a task test the only test to ensure that wages are fairly earned is to make payments not on a daily wage system but by the whole piece of work done.

MYSORE.

MYSORE.

Colonel Sankey.—Adoption of tasks to the exclusion of piece-work.— General definition.—The definition * of the task system is "that each individual is to earn a wage enough to provide "him with subsistence, but not enough to support the non-working members of his family." "Again † "the object to be attained is the relief "of the destitute, not the profit of the well-to-do, ". . . . a task will be required from each, *but "the labourer is not to be encouraged by any prospect "of additional pay to do more than his task.* ". . . . If the work falls short, a proportionate "reduction should be made in the wage, but the sum "paid must not be lower than that laid down in table B. "(a bare subsistence allowance) . . . . Should the "able-bodied cooly refuse to do his work or anything "like it, he is liable to be turned off altogether." Without making unauthorised allowances, the system thus defined is, to all appearances, a strictly penal one, opposed to the well-recognised principles for employing labour. While on the one hand it would tend to repel the well-meaning and industrious, it would on the other remain without terrors for the vicious and idle, if the penal clauses be not stringently enforced. So serious did the objections to this system appear to be, that I drew up the appended paper‡ for the consideration of the Famine Commissioners in Mysore.

Waste of public money entailed.—In this it is assumed that persons working under the impulse of self-interest would turn out work one-fourth in excess of what they would do under the task system; but this assumption was altogether below the mark. In one instance, which will presently be quoted from the evidence of the Famine Commissioner, the out-turn of work under piece-work was more than double that under tasks. If applied to a lump of work equivalent to the total of the Mysore P. W. Budget (of 25 lakhs), this would mean a loss of 14 lakhs to Government. But even this is too favourable a view, as, I believe, will be amply established, on measuring up and analysing the work actually performed in Mysore.

Evidence from outside.—Much the same results appear to have been obtained in Madras.§ Mr. Kirsh, divisional officer in the Bellary taluk, reported that, "before the adoption of the piece-work system by "village gangs, daily payments were made on all "works in the taluk, and it was found in practice "*impossible to exact any fixed task* from the very "large number of coolies on the works. My own

* Letter from the Famine Commissioner to the London *Standard* dated 28th September 1877.

† Circular by the Chief Engineer and Secretary in Mysore No. of $\frac{1630}{2707}$ 12th September 1877.

‡ Vide Appendix VII.

§ *Madras Mail* for 20th November 1877.

" time, and the time of most of those under me, was " occupied in counting the coolies on the works, and " preventing the most ample and at the same time " the most common frauds on the relief works. The " public works' staff could not possibly measure up " daily the works." As the results of adopting piece-work, the same officer observes, (1) " * the whole " of the money paid out of the cash chest reached the " coolies themselves; (2) * * * the returns " of the coolies were absolutely correct; (3) * * " the Government received full value for the money " expended; (4) the daily cost to Government for " coolies was less than according to the daily payment " system."

Approval of piece-work by Sir R. Temple.—In his report on the condition and prospects of Mysore, 14th February 1877, Sir R. Temple observed that "all the " work is done at ordinary piece-work rates * * * * " so long as good useful work on irrigation tasks is " being done at piece-work rates, perhaps it may not " be necessary to begin any large works;" and Mr. Bernard, in the inspection report of the Kolar division, remarked: "The Deputy Commissioner said that 'the " 'piece-work system was well known to all the " 'people, who in ordinary years repair their tanks " 'under that system; and the people would at once " 'detect any attempt of the head cooly to make " 'short payments for the work done.'"

Piece-work approved by the Famine Commissioner.—The most conclusive evidence on the point, however, is the order of the Famine Commissioner, Mr. Elliott dated 16th October 1877, on the work of the Timmenhuli tank in the Chittledroog district, from which the following are extracts: "The con- " tinuance of piece-work rates is contrary to the strict " letter of the rules * * but I am inclined to think they " may be allowed here for the following reasons—(1.) " The work is a big one. At relief rates it would " probably take 5,000 labourers four to six months * * " (2.) It affords a good example and stimulus to the " relief labourers. They see that they can earn more " by piece-work, *and many have gone over voluntarily " to that class; and many more will do so as they " grow stronger.*" "At present, Mr. * * * gets " 1 cubic yard for 3 annas from one class, and not " more than one fourth of a cubic yard for about $1\frac{3}{4}$ " annas from the other class (*i.e.*, at the rate of 7 " annas per cubic yard); *so the piece-work is advan- " tageous to Government, and it is not hard on the " labourers, but is popular, and the labourers are " in good condition.*" I have above sufficiently adverted to the fact of task-work being thus admitted to cost more than double the rate of piece-work, and will here only paranthetically note, that in this instance the lead must have been, or the supervision, lax, to run the piece-work up to 3 annas per cubic yard, as our ordinary rate is only 1 anna in soft, and 2 anna in stiff soils, with 50 yards' lead.

Piece-work practically reverted to in famine work.—So convinced was apparently the Famine Commissioner with the improvidence involved in the task system, after sufficient experience, that an order was consequently issued in the P. W. department directing coolies to be " tasked and paid *only in proportion to the work done,* " those who do no work getting no pay." As no limit was imposed on what a man might do, this was simply a reversion to the piece-work system, with a very proper penal clause. Owing to the demoralised condition to which some of the labourers had sunk from the effects of free-feeding at the kitchens, this latter clause was doubtless essential; though the weaning effects of the piece-work system would, as above shown, in the case of the Timmenhulli tank, tell in the long run. In Colonel Merriman's final note on the Bombay famine, dated 22nd December 1877, under the head "Task Work," it is shown that the Government directed that "supervising officers should " endeavour to introduce a system of task-work by " gangs, which would enable the labourers without " over-exertion to earn as much as their daily rate of " pay, *or to earn more than that rate should they " prefer to do so* * * " It was further prescribed that under officers of the P. W. D. the "task should " be fixed at not less than 75 per cent. and, on works " under the Civil Agency at not less than 50 per cent. " of the task that would be required from a labourer " on full wages in ordinary times." I confess myself unable to see how this task-work differed in any way from the piece-work system of Mysore, or as regards the standard of physique (*vide* Appendix II., where 75 per cent. of the normal was adopted). In both respects the Bombay system as here defined, and that of Mysore, differed essentially from that introduced by the Famine Commissioner in Mysore, with the new *régime*. As I have elsewhere considered the task system in its bearings as a test to be applied during famines for the purpose of deterring those not in actual distress, it is needless for me to say more on the subject here.

Major Moncrieff.—A year's experience of relief works has taught me no rule or formula by which to answer these queries.

Earth work and breaking road metal and railway ballast are works on which a task can easily be set. Of course they depend very much on the nature of the soil and the material of the metal.

In Mysore, 4 cubic yards of digging in average soil was looked on as a good day's task. Two men or three women could break up 1 cubic yard of quartz metal. Five women could carry in baskets 2 yards of metal or gravel a distance of $\frac{1}{4}$ mile. Two men or three women could dig and stack 1 cubic yard of gravel. Labourers may be classified thus:—

1st. Fully able-bodied workmen to do full task.

2nd. The artizan of weaker physique, such as the weaver, tailor, &c., unused to this kind of work, and those on whom famine has begun to tell, capable of doing $\frac{3}{4}$ task.

3rd. The sickly and emaciated sufferers from famine and disease, but not including the old. These have been termed the *Special gang*, and should not be tasked at all, but every effort made to keep them at work.

4th. The aged who at no time would do a good day's work, but might perhaps be tasked at half work.

Classes 1, 2, and 3 should receive about 6 pie a day more than class 4, to whom a pure subsistence should be given. The higher wage is given to "the special gang," in the hopes of bringing its numbers up to full strength.

If a civil officer is present he should classify the labour. If not, the executive or assistant engineer. Not a subordinate.

The labourers should be inspected weekly and any removed to a higher or lower class as he improves in physique, or the reverse. It may often be better to amalgamate classes 1 and 2 in order to prevent the breaking up of families and then only 75 per cent. of the full task can be required.

Gangs should contain 50 persons, say, 15 men, 20 women, 15 working children. The work should be daily measured up by the subordinate in charge.

A fully able-bodied gang may be paid rigorously according to their out-turn and cut (I do not call it punished) for any short work. Gangs less able-bodied should never be cut below a subsistence wage except for very obstinate idleness. This cutting should be done with great caution, and if it ever becomes the rule and not the exception, it indicates some fault in the management of the work. Frequent inspection of trustworthy officers is the only way of seeing that all is going right in a division. Where the work cannot be measured up, everything must be left to the personal effort of the subordinate in charge who must himself remain on the work and see that the people do work.

Colonel Johnson.—The system of piece-work advocated by me gets rid of all complications and is applicable to every description of work on which famine labour need be employed. The principal

Ch. III Qn. 10.

Mysore.

classification I insist upon is the separation of the able-bodied from the others. Piece-work, however, is applicable to others as well as the able-bodied if they will work together—all that is requisite is to raise the rates 75, 50, or 25 per cent. as may be considered necessary. It is absurd to expect a man will do 12 yards per rupee, while others close by are only doing nine or six, or even three, and the able-bodied gang must therefore be kept clear of the other. If they will not do piece-work, a lump of work must be measured out for a certain number and they must be ordered to complete it by night. Labourers must be raised from one class to another by the officer in charge of the work; but it is of no use his doing this, unless he can insist upon the additional work being done. What steps should be taken to compel them to do this, how they should be punished if they do not, had better be left for Government to decide. All I can say is, they should be compelled to do their tasks, and they should be punished if they do not; and it is chiefly on this account that I consider it so desirable that men having magisterial authority should have charge of those who will not work. The two great points to be arrived at are: 1st. To prevent the able-bodied from falling off in condition. 2ndly. To get all those who are not able-bodied into that gang as soon as possible. Public Works men will work the able-bodied to the best advantage, and keep them in order, provided they are not allowed to march back to the 75 or other percentage gangs. Public Works men may, of course, also work the 75 per cent. gangs on the same terms. For the more incapable gangs, the supervision, though perhaps of more importance, is not of the class suited to Public Works officers, and in my opinion had better be left to special selected revenue, relief, and medical men. There is, however, one important fact to bear in mind, which is, that if matters are made too easy for these classes, and proper classification be not rigidly enforced, it will be impossible to manage the able-bodied efficiently. It should be a *sine quâ non* that the able-bodied should be able to find nothing more attractive in the works for the classes below.

So far as I am aware, during the late famine any attempts to punish people for not completing their tasks were farcical.

Ch. III. Qn. 11.

Question 11.—Piece-work.

Under what conditions, if any, is payment by piece-work practicable on relief-works, that is, payments for quantity of work done at a fixed rate, irrespective of the amount of daily earnings? What are the advantages and disadvantages of the system? When it is advantageous, how can it be best adopted on a large scale, and what precautions would be necessary to prevent its abuse?

Punjab.—Piece-work not objected to if care is taken to fix the rates so that unskilled labour can subsist on them.

North-Western Provinces.—Opinions not generally adverse to piece-work, which was used to some extent in 1877 by forming mixed gangs. Some officers, however, contemplate piece-work, through contractors. Payment by cowrie also recommended.

Bengal.—The opinions are in favour of piece-work on the system of village gangs.

Bombay.—6 answers. The opinions are mostly adverse to piece-work, of which the officers reporting have little experience in famine.

Madras.—Twenty-six European and 1 Native gentlemen have replied.

There is almost an unanimity of opinion in favour of piece-work, so far as able-bodied labour is concerned, on the grounds of economy to the State in ensuring a fair return of work with a minimum of supervision, of affording encouragement to the labourers, and of minimising the opportunities for fraud and peculation. The disadvantages stated are that it favours the strong and discourages the weak, and that Government has to pay more per head than the price of mere subsistence.

Punjab.

PUNJAB.

Col. Parsons.—(*a.*) Piece-work is practicable in all relief works to a considerable extent. (*b.*) Deputy Commissioner is not aware of its having any disadvantages, provided the rates are not such as to render the earning of a fair wage (*i.e.*, sufficient for daily food) by unskilled and fairly strong men impracticable. (*c.*) With a view to provide relief to a large number from any given work of special relief nature, the payments to individuals can be limited by fixing a maximum daily limit of work and wage for individuals or petty gangs.

Mr. Nicholl.—Piece-work is very good, where a given piece of work has to be completed within a given time, and a fair rate is given; but if famine wage rates are applied to the quantity of work done, there is no advantage in adopting this system; *e.g.*, it has been ascertained that an ordinary labourer can dig 100 cubic feet per day, and the rate for earth-work prevailing in the district is 3 annas per cent.; if this rate were given the work would be done quickly, but if say ½ that rate only were given, or 1½ anna, the same amount of work would not be done. If the object be to employ a certain number of people over a given period on a particular work exacting a fair day's labour from each, then the piece-work system is of no advantage; what a fair day's labour is can be decided in each case on the work.

I have tried the system, but the people would not do a bit more than their ordinary share of work unless I raised the rate on the quantity of work ascertained to have been done. They said they did not care to over-exert themselves without an inducement, as under any circumstances the Government were bound to maintain them till better times come round.

NORTH-WESTERN PROVINCES.

Captain Home.—Payment by piece-work is only practicable where the labourers employed are people who are in the habit of gaining their living by excavation and are accustomed to it. It should be optional, as it could hardly be applied generally to the miscellaneous collection of classes who are gathered together on a relief work. To be useful the "piece" should be equal to at least three days' work. The advantages are that less supervision and less frequent payments are required, and that the work would probably be done cheaper.

The disadvantages are that the work-people may not be able to wait for payment till the piece is finished, that the labourers working in the same piece must be known to one another, and that the labourers may be driven away from the works owing to the work given being out of proportion to their strength.

To adopt piece-work on a large scale, the people of the same village should be grouped together under a mate of their own selection, and a certain length of the work allotted to each gang in proportion to their numbers; about ten days' work would probably be a convenient amount. Payments would be made through the mate in presence of the gang at convenient intervals on measurements. Should any disputes arise they could be easily settled.

Mr. Cordner.—(*a.*) Not only do I think the piece-work system practicable on relief works, but (*b.*) I consider that it should be the very backbone of the whole system.

During the Bengal famine of 1874 I had charge of the relief works in the Purneah district, and from the very commencement of the work I introduced the piece-work system, and which, though *at first* strongly opposed by the people, worked in a very satisfactory way when completely established and understood.

(*c.*) The following is a brief account of the system. The works consisted in new embanked roads in various parts of the district and varying in length from 20 to 80 miles.

As soon as the project was approved of and the necessary levels taken at every 100 feet, profiles were put up and the side cuttings marked out, in which a *uniform length of* 90 *feet was adopted* for every 100 feet of the road. The depth of the cuttings was also uniform (within certain limits in height of bank), so that the only variable was the width.

I had tables made out which at a glance gave the width of a side cutting for any height of banks, the quantity in each chain, and its value at the various rates prevalent in the district.

Two sets of tables only had to be made out, as the roads were divided into two classes, 20 feet and 16 feet at tops and side slopes 2 to 1.

As applicants came on to the work they were divided into gangs by villages, and according to the number in each gang; a greater or less number of chains of the road were reserved for that village, so as not to have two gangs working close together.

Each gang elected their own headman or ganger, and to him all payments were made, and by him distributed to his gang. This man was paid two annas a day, but did no actual work.

Payments were made from two to three times a week in the following way:—The sub-overseer would come to a gang, and, if they had completed a side cutting, all he had to do was to measure *the width* of the side cutting, and a glance at the table (a copy of which he was supplied with) told him exactly what was due to the gang at the rate fixed for the work. If the whole of a side cutting was not completed, he would roughly estimate the amount done and pay for it on account. After measuring the side cutting, he would fill in a form (copy enclosed) giving quantity and value of work, and also an order to the cashier to pay.

The ganger would take this slip to the cashier, who had an office at some point on the road, so that no ganger would have to go more than five miles to get paid. After being paid he would sign the receipt part of the slip, and the cashier would enter the transaction in his cash-book and send the slip to Executive Engineer's office as a voucher, when his imprest was recouped.

No cash was paid by anyone but the cashiers, who were nearly all appointed on the recommendation of the Collector of the district, security having been taken from them. Their imprest varied from Rs. 2,000 to 5,000 each, and they were recouped direct from Executive Engineer's office.

The checks on the system were as follows:—Every member of the establishment had a table of quantities and value of work supplied to him, so that as he passed along the work all he had to do was to take the width of a tank and ask the ganger what he had been paid for it. He could see also from the table that the width of side cutting was correctly laid out for the height of the bank. In Executive Engineer's office a record was kept of the total estimate of work in every chain of the road, so that the sub-overseer was checked there from overmeasurement, as he had to note on each slip the number of the chain for which the bill was made out.

These slips, though very simple in character, form a complete record of the work. The sub-overseer and cashier kept counterfoils of what they signed, and the original was sent to Executive Engineer.

As the light-labour works were in charge of the civil officers of the district, when unable-bodied men came on to the Public Works Department works, they were put on light work (such as breaking clods, &c.) on daily pay until they could be transferred to the light-labour gangs, the civil officers being responsible to take over charge of them as soon as possible after notice had been given to them. I think the piece-work system could also be adopted for labourers not in good condition, by putting them in gangs by themselves and giving them a higher rate for the work than what the able-bodied would get.

Major Jeffreys.—*Piece-work is practicable* (1) when the works are *large* and *confined within a small area;* (2) when there is a *large supervising* establishment. The advantage of such work is that a stricter task can be exacted from the labourers than by any other method. The disadvantages of it are, that frequent and even daily measurements are necessary; the supervising staff are soon worked off their legs.

Earth can be removed by the *cowrie system*, which is another *species* of piece-work. It consists of paying a certain number of cowries or tokens for each basketful of earth carried. All classes of carriers, of any caste, age, or sex, will do this work cheerfully when all other systems fail, and the result, if properly managed, may be made to show a satisfactory and moderate rate. The diggers have to be paid separately by the day or according to their task. This is the kind of work, next to contract work, that most commends itself to me, and it gives the least labour to the supervising establishment and offers the fewest opportunities of systematic fraud. It is by far the fairest and most equitable to carriers, for every woman or child knows that she or it will obtain an exact equivalent for her or its labour without fear of being defrauded at the expense of another. The advantages of this system are so manifest that one who has once employed this system would never adopt piece-work if he can help it.

Mr. Colvin.—I do not understand the distinction between the piece-work and a fixed labour task. All our work in the previous sense was piece-work. A khassa holding so many cubic feet at so much money per hundred cubic feet was worked out and made over to a gang of 30. They might do it in half a day,

in a day, or in three days; but they would only be paid its value.

The mixing of strong and weak in the gangs prevented abuse.

Mr. Sandys.—Payment by piece-work would be practicable on relief works if the Zemindars or headmen of villages and not ordinary petty contractors came forward and took contracts on condition of paying their tenants or residents of the same village at a fair rate. The advantages of this over the daily labour system would be, that a much smaller establishment would be required, and inhabitants of the same village would be kept together. The disadvantages are that a sufficient number of Zemindars or headmen would not be willing to take contracts so as to relieve all who are in distress in their village; they would not employ the weaker ones, and would endeavour to make the most they could out of the contract, and would not, as a rule, make daily payments, at least it would require very strict supervision to make them do so.

The piece-work system was only adopted on a small scale in this district.

Mr. Kennedy.—The relief works started by the municipal committee of Sháhjáhanpur in August and September 1877 were all done by piece-work. The applicants were formed into mixed gangs containing both strong and weak, and were put under the contractor, who received one-fifth of the amount paid as his share of supervision. Thus supposing the rate per thousand feet of earthwork was Rs. 1-8-0, the contractor would get four annas and the labourers Rs. 1-4-0. In one case over three thousand labourers were employed. In this case the system was only possible because these works were started at the very commencement of the pressure, and before the people's strength had been exhausted. It was possible therefore for them to give full work. The condition of those who came later was much worse, and they could not earn a sufficient livelihood by piece-work. This year the relief work under the municipality has been chiefly paid for by day wages in accordance with the Public Works system, but latterly the ordinary gangs have been employed at piece-work, indigent gangs only being paid at day wages. As the result of this experience, I should say that piece-work is practicable at the commencement and at the termination of the famine, supposing that men in both these stages have either not lost or have recovered their physical strength, but at other times piece-work is disadvantageous. The hopelessness of famine-stricken men is one of the chief difficulties to be overcome, and the prospect of contract tasks only depresses them further.

Mr. Lawrence.—In the early stage of the famine, payment by piece-work may be practicable. When distress is imminent, contracts for earthwork on roads, canals, &c., should be given, but the *contractor should be tied down to finish the work within a certain time*, so as to drive them to employ others than the professional diggers; even if a higher rate be paid, this will be a cheaper plan than for Government to start relief works itself.

Mr. Cornwall.—The rate for piece-work is fixed to give a gang the ordinary rates of wages, provided they do the work. Last year no disadvantages were found from it during the short time it was in operation; and with good overseers to see that the work is done properly and to measure it up carefully, the system ought to answer far better than the payment by daily wage. The difficulty is to get trustworthy overseers in sufficient numbers.

Lieutenant-Colonel Chamier.—Payment by piece-work was tried in the early days of relief and was found practicable for the able-bodied gangs only. It is a species of contract and more advantageous to the labourers than to the State, for directly the workmen come to hard ground they stop work.

BENGAL

BENGAL.

Captain May.—I would not advocate payment to piece-workers for quantity of work done by them at a fixed rate in addition to the daily wages under any conditions, because it is quite unnecessary, and they can earn more than sufficient by piece-work alone, and it would frustrate the object of relief by making it lucrative to the stronger class; but there can be no objection to task-workers on daily subsistence wages receiving any excess in the value of work done by them after measurement over the subsistence allowance.

Mr. Kisch.—The piece-work system is the best of all systems for famine relief purposes, whenever there are large bodies of labourers in need of work do a full day's task. The system of piece-work by village gangs is the best of all piece work systems. According to this system the people of a village form themselves into one or more gangs under head-gangsmen chosen by themselves, and work together on the piece-work system. The head-gangsman alone is paid. There is no object in anyone giving false returns of the numbers on the work, and there is no necessity to supervise the payment to individuals. When the piece-work system is adopted, the rate of wages should be fixed so that a labourer doing an ordinary Public Works task would earn the full wage as fixed above in the answer to Question 6. If a labourer does more or less than an ordinary full Public Works task, he will earn more or less than the wage fixed as necessary and sufficient.

When, for any cause, the system of piece-work by village gangs cannot be adopted, the next best plan is to employ petty contractors; but, then, careful supervision is necessary to secure that the coolies are paid their wages regularly. Where there are large contractors employed, security must be taken.

Mr. Lowis.—I have already shown how our labourers were paid for work done, according to a fixed scale.

The advantage of the system was that it secured our having none on our works but those really in want of work; it also enabled men to go away at intervals to attend to their fields, and also by working overtime to earn a few extra rupees to pay for seed grain, &c. As long as the subordinate officers employed in measuring up the work are fairly honest, there ought not to be any opening for fraud. I do not consider that it is any disadvantage that, under this system, a labourer can earn, if reasonably diligent, more than a bare subsistence; whatever work he does has been well earned, and Government are no loser.

BOMBAY.

Mr. Hart.—Payment by piece-work is, in my opinion, inapplicable to pure famine relief works, the object of which is to support the greatest number of population at the minimum cost to the State, not to get the most work done at the cheapest rate. Abuse of the system would be sure to creep in, in spite of all ordinary precautions.

General Wilkins.—Piece-work is not generally adapted for famine works. It was found suited only for the gipsy class—the Wudders and Limanis—who hate systematic proceedings.

Payment for piece-work is made to the head of the tribe, with the concurrence of the whole tribe.

The disadvantages of piece-work are, that, excepting with the gipsy tribes, payment for piece-work to the headman would be fatal as respects a due division of the wages. The weaker members would go to the wall.

Its advantages lie in the facility with which parties are managed and paid.

Mr. Norman.—Piece-work is advantageous at the commencement of a famine. It enables the strong and able-bodied labourers to earn more than a bare subsistence rate, and thus lay by something, either for the support of their families or for future emergencies. Work is also done cheaper by this means. The disadvantages of the system are that the weak and infirm cannot earn enough for their support, and therefore, in the height of a famine, when the prices of grain are very high, it would generally be advisable to have recourse to the system of a regular subsistence wage. The Public Works Department have, I believe, no difficulty in introducing task-work on a large scale, but I am not aware what precautions are adopted to prevent abuse.

Mr. Spry.—Payment by piece-work is only practicable on works when the members of a gang have a common interest with each other; a gang consisting of people from one village would have a common interest; so would a Tondu of Lamanis, or a party of Wadars. But if a gang is made up of people, strangers to each other, and having nothing in common, the system would fail, because the idle would at once begin to shirk and the others would have no influence over them to do otherwise. I should think that only in exceptional cases would the system be advantageous.

Mr. Robertson.—Government, as a rule, has been averse to piece-work. I cannot see any disadvantages in the system applied to famine work; on the contrary, I see great advantages, such as decreased expenditure, decreased distress, and a far better out-turn of work for the money expended. The famine wage, as I have already observed, is only just sufficient to support the individual. It is well known that native families hate being separated; a strong bread-winner would prefer to have his aged relatives with him and to support them by his own and his wife's extra labour than to be separated from them.

Upon a fixed task for famine labour being laid down, extra work should be paid for as piece-work. The result, I think, would be a great saving under the head of "Charitable Relief" and under that of "Civil Agency Works." If a man working by piece-work did not support his infirm and aged, then he should be struck off from the piece-work gangs, who should be held to be gangs with special privileges. A careful checking of measurements will be requisite.

What I heard of the piece-work system on the Nira and the railway was very favourable; people were more contented with it, if not too feeble. It facilitates the joining together of strong and weak gangs on the same work. There was no difficulty found in carrying on different rates of piece-work side by side.

Mr. Candy.—To refer again to what is called the "piece-work" system. I do not think there were rates of piece-work for people of different strength. The rates were so much a hundred cubic feet, and they went up or down as the earth was soft or rocky and as the embankment was high or low. The working party might be only a man and his wife, or it might be 20 men and women, under a recognised head of their own choosing. The system resolved itself into one of petty contracts, and one man for each party gave a receipt for the tools supplied. Those who were weak could work in black soil where the bank was only two or three feet high, and so earn a subsistence. The strong could work where the rate was over 1 Re. per 100 feet and so make money. If a man fell sick or met with an accident, it was essential there should be a hospital to take him to, and so arrangements were made accordingly. Under this system the people lived in their pits, which afforded excellent cover from wind, and even shade from the sun, except at midday. They were happier than when living in lines on organised principles. Moreover, the children were near and amused themselves carrying up clods on their heads. In the Government gangs the children were kept from their parents and put in charge of old women, hence constant crying and a line of mothers always running away from work to see what was the matter.

Instead of working from sunrise to sunset with a break at noon, the people worked when they liked and sat down when they liked. I have heard them working and singing at 10 p.m. on a moonlight night.

All this time I was also the magistrate of the railway, and I can speak of the conduct of the people with great praise.

I also had charge of a tract of country, including about 100 villages, which I and those under me visited constantly. The infirm were mostly fed in their own villages, but nearly a thousand were gathered at a large relief camp a few miles off the railway line.

Major Daniell.—On the Dhond Railway, in March, April, and May, I think the task exacted was too hard; the people had got into a poor condition, and when they first came on to the work they were weaker than the executive officers thought. It was a point of honour with the engineer officers to get the work done cheaply as well as quickly. The chief engineer exercised a very close supervision over his subordinates, and demanded a very large out-turn. This was remedied afterwards by having recourse to piece-work; the people, when I saw them on this work, were looking in better condition and more cheerful, and were working with a will. This was even under a severe engineer who had originally overtasked the people. From what I saw then, and what many engineers have told me, I should recommend the piece-work system for the able-bodied, provided there is also a system of task-work on Civil Agency work for the weaker labourers. As to the lame, halt, blind, &c. who came to the relief camps, in ordinary times they are fed by relations and friends, and only when that fountain of charity dries up, they come on our hands; in ordinary years one never sees or hears of them, but in famines they come to the surface and appear in crowds. It would be far better to feed them in their villages, and, I think, that under proper supervision, this could easily be done through the patels. I have great confidence in the patels, and believe they may be generally trusted with sufficient grain to feed the people on the village lists between one visit of an inspector and another. They have great influence and a high position to keep up. The distribution of charity in such villages should be in cooked food, because many of the recipients are unable to cook for themselves. No one but Brahmins would object to food cooked by Hindus. Not many deaths

CH. III. QN. 11.

BOMBAY.

came under my observation. The mortuary registration is quite apart from the police; they only record the sudden deaths, or deaths from extraordinary causes. Every village is attached to some police circle, and has to be visited at least once a week.

Mr. Clerke.—I object to piece-work on famine works. It would increase the expenditure very much; many people would come for piece-work wages who are not in severe distress and would not come for a mere subsistence allowance. No doubt it saves trouble to the managing officers, but good workers will earn too much while the weakly would not earn enough. The Patas and other tanks were under me and were entirely on task-work. I had no piece-work gangs. I did not try the experiment of attaching an optional piece-work gang to a relief-work for the object of encouraging the workers who might choose to work harder and earn a little more than the subsistance wage, nor do I think it was necessary. I used to have gangs of about fifty, and the whole gang was cut if they did not complete the task; but after a little time, when they understood the system, there was very little cutting. Those who were on Civil Agency rates we could not cut at all; those on Public Works rates we could cut down to nothing if they did nothing. I think there should be a limit to cutting; a very careful and considerate officer might not need this, but a more careless one might cut too much, and I would prefer that cutting should not be allowed below the Civil Agency rate.

Mr. Whiting.—The plan pursued in 1877 was, in my opinion, the best that could be pursued under the circumstances; the people being weak and unaccustomed to labour, and the establishment unaccustomed to deal with people in this way, that is, to deal with famine labour. But the modified system in 1878 is a better one when the people are stronger and they and the establishment have been trained to the work. The results of the latter system were much better as to cost of labour. In 1877–78, the actual value of the work was Rs. 1,41,000 out of Rs. 3,16,000 expended. In 1878 (April to September) I spent Rs. 1,14,000, of which the actual value was Rs. 94,000. Of this expenditure, over Rs. 37,000 was for canal work exactly similar to that of 1877, and the actual value of out-turn was over Rs. 27,000. The rest of the work was also carried on by relief labourers, such as excavation of foundation, breaking of metal for concerte, and preparation and carriage of materials. Some skilled labour was employed on masonry, but even the masons were in distress when they came. In the latter stage the people were not so badly off, worked more heartily, really intended to work, and had not so many thin children. I did a great deal more for the weak people than during the first stage, fed them often with cooked food for a fortnight to get up their strength, and so on; and this was due partly to my increased experience, partly to having a better doctor, partly to having a larger establishment compared with the number of labourers. I consider a good doctor to be essential to the proper management of a relief work: a good native who knows the people well is better than an English doctor. Those who lived near the work I allowed (in this second stage) to go to their villages; but then they lost some privileges, such as wages on wet days, allowances for children: many of them, however, left their homes and lived in the huts in order to gain these privileges. If any were idle, and could not be made to perform their task, they were not allowed to come on work near their homes, but were sent to another part down the line, and if they submitted to this test and went, we considered it a proof that they were really in want and feeble, and we put them in a lighter class.

The outcome of my experience is that if the work is a really useful one which Government wishes to finish, if the establishment is well trained in the management of famine relief, if the people do not come on in great numbers so as to swamp all organisation, then the best way to treat them would be the system I adopted in the latter stage. I would have the majority and the more able-bodied on a kind of modified piece-work, on which they can earn a little more than a bare subsistence, but cannot be cut down below a minimum, having at the same time a lower class on lighter tasks, or no task at all, earning the Civil Agency wage.

MADRAS.

MADRAS.

Mr. Longley.—When laborers consent to form themselves into gangs (either villagewar or familywar) and to receive payment on the outturn of work returned by the *whole* gang, this is practicable.

The advantages are—

(1.) That an inducement is held out to the laborers, who are thereby prevented from wandering.

(2.) That a fair wage is obtained for a fair return of work.

(3.) That members of the same family and their neighbours are kept together so as to ensure mutual assistance in their work.

(4.) That a fair return of work for the outlay is insured and supervision reduced.

(5.) That payment of wages as well as measurement of work is facilitated, as dealing with individual cases is dispensed with.

The disadvantages are—

(1.) That one laborer is taxed or suffers for the laches of another (but this with his consent).

(2.) That Government may have to pay more than sustenance wages (which I understand to be the principle of relief administration) as the payment is regulated by the amount of work turned out.

When the work is large it may be divided into convenient sections to be allotted to each gang. If these sections are marked out and the quantity and nature of work to be done previously determined, there will be little room for fraud.

Mr. H. T. Ross.—After a considerable experience of *piece-work* under different conditions I can conceive no circumstances in which it is not practicable on relief-works. Its advantages are—

(1.) A sure and equivalent return is obtained for the money expended in relief.

(2.) There is no necessity for a large supervising and paying staff, such as is required on gang works, to make the coolies work, and to pay them.

(3.) Time is not wasted in roll-calls or in making individual payments, the head of each piece-work "group" being alone paid.

(4.) There is the maximum security against fraud, for payment is made only on measurements of work done, and measurements are easily checked at any time.

(5.) Fines inflict themselves on a perfectly equitable system instead of being arbitrarily inflicted as they now are on the gang-work system.

(6.) Returns of the numbers of persons working can always be relied on as correct, as nothing could be gained by adding to the true numbers of those who have worked.

(7.) The laborers work with interest in their labor, the unit of labor being a family or volun-

tarily-constituted group of residents of the same village, who work without any risk of being fined for the shortcomings of strangers arbitrarily ganged with them.

The only disadvantage of piece-work is that it does not meet the cases of isolated individuals who cannot succeed in becoming members of any voluntary-constituted "group" and who do not care to work solitarily at piece-work. But in a general system of relief this drawback is easily remedied by having one "gang work" in each taluk, or even in each division of, say, three taluks, to which such individuals can go or be relegated.

Mr. Oldham.—Payment by piece-work. (1.)—The practicability of this system seems to be only limited by the amount of room which the relief-work affords.

(2.)—Its advantages are—considered purely as a relief measure and apart from its results in the outturn of work—that when the work is apportioned to separate villages and care is taken that all classes of pauper residents in the village are admitted to it, all other forms of relief in that village may cease, or be contracted to a degree which would not be otherwise practicable. If piece-work is given to individuals or to families, apparently the only advantage is in the much larger outturn of work rendered under it. I only advocate it when allotted to villages. A further advantage is that it permits the whole class of troublesome and dishonest gang writers and non-laboring gangsmen to be dispensed with.

(3.)—Under this aspect its disadvantages are more apparent than real. Each individual recipient of relief is not as fully identified as under the nominal-roll and daily task system, and one individual may earn more than is necessary for his support. In the first case control is lost to some degree, and in the second there is an appearance of waste, as the State only wishes to expend the exact amount required for the support of the individual whom famine has made solely dependent upon it.

(4.)—These objections can best be met by a description of the system as it was practised last year in Adoni. The applicants from a village presented themselves and their fitness for admission to a relief-work was decided on. Then to them was assigned a section of piece-work, the price for which was calculated by ascertaining how much it would cost were it done by the daily labor of the applicants, each giving a full outturn of work (according to the Public Works Department rate of the taluk in ordinary year), and being paid each in his several class of adult, non-adult, male and female, according to the scale of daily wages then in force. Once the work was assigned these people came to it just as they liked, some of them absenting themselves for days perhaps. They put forward their own representatives to receive the price for each section in a lump. At the same time gratuitous relief was much contracted in these villages. It was obvious that if any individual earned more than his famine wage the surplus overflowed into a deserving channel.

Mr. Weekes.—The pettiest system of piece-work is that of payment of a cowree or two per each basket of earth carried. This is often a very effective system, but it requires a really honest paymaster, who must also be present all day; of course a check might be applied by having the earth so carried, dressed and measured or the excavation measured, but the contents of the baskets will always vary. The rates of this and all kinds of piece-work can be calculated so as not to give much, if at all, more than what is proposed to give as the total wage for the day; but I am convinced that it is a good system, and that it would be economical in the end to follow the system and to calculate the rate so that the stronger could make a little more than necessary and the weaker enough. This would stimulate the laborers, give them a healthy interest in their work and an incitement to recover strength. Weighed against the losses incurred by payment of labor by the day and the practical impossibility of always exacting a daily task from the light labor or civil agency laborers, any loss by overpayments, I mean payments in excess of subsistence rates, would be, I believe, very small, and it would be not a loss really but it would go to make the strong stronger and fit to go to professional or larger works, and make the weak less so. The disadvantages are that it gives too much to the strong and little to the weak. But on smaller or light labor works all are weak. Practically the weak object to it and it is greedily accepted by the strong. But wherever I have introduced it the effect has been magical in the increase of outturn. Measurements must be made and the sum checked by a trustworthy officer. The old standard argument from abuse must never be listened to. It should be understood that good management is required in all systems, but of course a proper staff is essential. Abuses there will be, but they must be reduced to a minimum. The great and almost inseparable disadvantages of piece-work are that it is very difficult indeed to measure up daily the amount of work done. One remedy I would propose is to measure up weekly, and this would fit in with weekly payments, and the measurements like the payments should be carried out *by the superior officer*, who like the assistant collectors should not be above detail and should measure *themselves*.

Mr. Travers.—I do not think payment by piece-work advisable on relief works; it may at times be practicable in such work as tank digging or channel cutting, but one of the great objections to it is, that all the strongest and best working people would take it, and leave the weaker ones to work by the day; consequently Government would be losers.

Major Ross.—I would have all work on relief works done by the piece: otherwise the cost of relief works compared with normal rates is enormous.

I would divide the laborers into two classes of *physique*, as at present, and would fix a certain quantity of work to be done at a certain fixed rate, of which the engineers would be the proper judges; the quantity to be exacted by the first class should perhaps be a little under normal rates, and that from the second or weakly class to be of course much less, say 50 per cent. below normal rates, as they are at present supposed to be capable of performing, but they should not be paid, as at present, a minimum wage whether they work or not, but strictly according to the amount of work accomplished in accordance with their respective rates.

Major Ross Thompson.—I am unable to imagine any conditions under which piece-work is impracticable or undesirable. It can be worked on the largest and the smallest scale, and I cannot see how any appreciable abuses can arise.

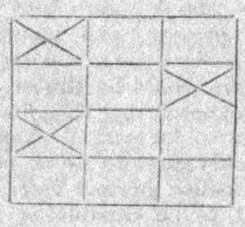
Piece-work* is soon understood and willingly accepted by laborers when the work to be done is within their powers of execution. The officials of the Public Works Department are the best judges of what is possible and what is not without crushing the laborers with overwork. The earthwork may with great advantage be marked out in squares or oblongs so calculated with regard to "lead" and "lift," &c., that the value shall always be one rupee. A man with his family may then be allowed to commence

* I mean that overseers or other trustworthy men should go about all day on the work, say between 7 A.M. and 5 P.M., with a bag of rupees hung over their shoulders, paying for each unit the moment it is completed. I am not theorising on this subject, but simply recommending what I have successfully practised. In the latter end of 1876 I was at Bangalore and a sum of money was placed at my disposal by the Mysore Government for famine relief work. The work undertaken was forming a roadway on two sides of the Ulsoor Tank. When the line of roadway had been marked out, the pits from which the earth for the road was to be brought were also marked out in rupee units. Regular surveys or sketches were made of the various groups of these units, and a sapper corporal or sergeant placed in charge of a certain number. A number of rupees equal to the number of units in his charge was handed to the corporal.

work on one or more of these units, and he should be paid on the moment and on the spot for every *completed* unit; when the ground has been marked out in this way and a rough sketch plan of it made, with the dimensions correctly entered, there is no confusion, no chance of mistakes. As a man reports the completion of his unit, it is at once inspected, and, if properly completed, paid for on the spot by the overseer or whoever may be in charge. The amount of encouragement and energy which this system imparts must be seen to be realised. The men know that the sooner they finish their unit the sooner they get their rupee and the sooner they can begin to earn another. The sight of the money being paid into the hands of those who have completed their units, paid on the moment of completion, paid on the ground, paid on the spot, gives heart to those whose units are still incomplete. I regard this system as the best possible. The laborers are kept in good heart; the more they work the more they earn, and the Government get the equivalent for their money at the rates decided upon by their own responsible officers in the Public Works Department.

Another of the many advantages of piece-work crops up here. If one of a family or party at work on any units or group of units happens to be *a little* sick, he can afford to take the rest needful for his recovery, as his fellow-laborers are able to maintain him. No case ever came under my observation of their having objected to do so. They allot the work amongst themselves most fairly as a rule. Another advantage in the system is that gangsmen are not required, and "cooly-driving" may be dispensed with. Maistries are only required to assist the overseer in laying out the units on the ground. All the rest the people know it is for their own interests to do for themselves as well and quickly as may be.

When a unit was completed he marked it with a cross, thus—



and paid for it then and there. The number of unmarked units at the end of the day represented the number of rupees in his possession. The number of crossed units represented the number of rupees he paid away. No other accounts were required or kept by the corporals on the work. The work when carried on under this system can be frequently and easily checked and inspected by the engineer officer. It requires care and judgment in laying out the work, so that each unit shall represent a rupee, but when this has been done all goes smoothly.

Lieut.-Col. Prendergast.—Provided the laborers are in fair condition, piece-work is generally preferable to daily wages. The advantages are, that the people work at what hours and as much as they please; they need not be constantly watched; and they can earn a good living, while the work done is paid for at its ordinary value. I see no disadvantage.

Major Mead.—Piece-work should not be allowed on famine relief works proper where coolies are only to earn a wage supposed to be but little over a bare subsistence. Coolies wishing to earn more than this and willing to do so should be encouraged to go to ordinary works.

Captain Awdry.—Payment by piece-work will prove an economy to Government in establishment and in out-turn of work provided that it is only given to be done to able-bodied coolies. The rates for piece-work may be calculated taking the subsistence wage for a man as what he should receive for the piece of work ordinarily turned out by a man in one day. The advantage is that there is much less room for misappropriation of coolies' money by the establishment, as the coolies themselves know exactly, what they have earned, and an officer can check it at any time; the establishment required may also be smaller.

The disadvantages are that (1) coolies who *could* not work may be overworked or get no wages which can be obviated by applying labor tests to the feeble; (2) that Government may have to lay out a little more money per head than they do under the task system, but on the other hand when they do lay out more it will be because more work is *bonâ fide* turned out.

It would be advantageous where there were any large number of able-bodied coolies on any work, were they formed into a gang and told to elect their own gangman, who would receive their wages and disburse them to the coolies. The gangman must be one of the *working men*, and on no account must a Brahmin or other non-worker be admitted as a suitable representative of a gang of work people.

Mr. Hayes.—I believe piece-work can very well be allowed to go on side by side with task-work on a relief work where there is such sufficient room, and I think the peremptory orders stopping it altogether on relief works in Madras were a mistake, as piece-work is calculated to create independence in the labourer. There is no doubt in my mind, from what I saw of the condition of the labourers when only piece-work was in force on any work, that as a means of relief by itself it fails, as the contractors will not employ the people who have fallen into a reduced condition, but I feel certain piece and task-work can very well go on together.

MYSORE.

Colonel Sankey.—Effect of keeping employed the able-bodied by piece-work.—Throughout the season of greatest pressure, there were say on an average 28,000 able-bodied thus engaged under the P. W. Department. Of these probably 8,000 men on the *Mulnād* road works were saving about 4 Rs. per mensem each, for a wife, and perhaps two children, in their villages—the small fund probably going also to help out the scanty means of one or two relatives It is not, I think, too much to say that each of these coolies was more or less instrumental in keeping four other persons from looking for charitable support to Government or private individuals. Again, for the remaining 20,000, made up of coolies, their wives, and grown children, they may be credited with each providing for a non-working member of the family, or hanger-on. Thus by keeping open the ordinary public works for the able-bodied, in the proper sense of the term, the numbers actually kept from seeking charitable relief may be estimated as follows:—

Total average number of labourers employed by the P. W. D. -	28,000
Maintained by the 8,000 *Mulnād* and Coorg labourers - -	32,000
do. do. by all others	20,000
Total kept from the kitchens -	80,000

In the month of May, when there was little field work to attract the labour, 36,000 were directly employed under the department, and probably at this time over 100,000 of the total population were thus kept out of the kitchens, or from other forms of charitable relief.

No test needed with the piece-work system.—In addition to the distance test, Sir R. Temple was of

opinion that the possession of jewelry by the women, coolies, &c. should be taken as sufficient proof that the applicants were well off, and did not require relief; and possibly under the task system, with its opportunities for malingering and scamping work, it can hardly be denied that some very stringent precautions and close inspection may have appeared necessary. But Lieut.-Col. Johnson, under whose advice the piece-work system was adopted by the Mysore Administration, always held that test of piece-work might well be left to provide for this. It mattered, in fact, little what were the outward signs of prosperity of the applicants, male or female, if they were prepared to work at rates which required them to exercise their strength well, to enable them to gain a sufficient livelihood for themselves and the non-working members of their families. Although the piece-work system should be sufficiently stringent in its terms to prevent its proving a premium on idleness, or as bidding against the planters, cultivating ryots, and other employers of labour, the other extreme should be equally guarded against.

Adjustment of piece-work rates so as to meet the requirements of physique and the market rates.—The chief aim is admittedly to preserve, as long as possible, the normal standard of physique among the working population; but circumstances may occur, as in Mysore, tending to a general lowering of the vital powers from long-continued under-feeling. When such reduction is recognised the piece-work task should be lowered, or, what is the same, the rates ought to be correspondingly raised. About the middle of July it was judged from the reports of the executive engineers, who had been watching most carefully the condition of the people, that the rates might with justice be raised in many cases, if not all round, about 25 per cent., and other arrangements adopted to ensure the people earning full meals, according to the market price of grain, then fluctuating, and rising rapidly. This was tantamount to recognising that the physique of the people was then only 75 per cent. of the normal. A further decrease to even 50 per cent. could similarly and with equal ease have been provided for, and by this means the apprehension entertained by Her Majesty's Secretary of State, that a too-vigilant economy might be made to press with undue severity upon the labourers when so reduced by privation as not to be able to perform a full day's work, might be effectually provided for, and guarded against. The arrangement alluded to was made in a Circular of the 21st July.*

Acknowledged difficulties of segregation.—A most serious difficulty is to find means of providing for persons of widely different physique in one and the same work; but although this presents itself in the task as well as the piece-work systems, it is much easier dealt with under the latter. The experience actually gained will prove this, and is more valuable than any theories.

Mr. Ricketts.—From what has already been said it will be seen that a civilised system of compelling persons receiving relief to work will be difficult of application and consequently the piece-work system has undeniably its advantages as being more rational in form. The advantages of piece-work are that less supervising agency is required; better influences and motives to work are brought into play, and Government gets a better return for its money, whilst the labourer in the same way gets a better return for his work, and which return the labourer is often enabled to divide with others who otherwise might also require Government relief. The disadvantages are that the increased earnings gained by certain individuals go to some extent to lessen the fund appropriated for relief purposes; or, in other words, the money spent on a comparative few would otherwise be available for expenditure on many; further, that it gives an undue advantage to the strong and coarse over the weak and delicate; every strong digger looking out for hardy labourers alone to be his fellow-workers, and consequently sending the feeble to the wall. These remarks apply chiefly to large works. In small civil relief works, especially on tanks, the piece-work system works very well, and in fact might be the rule. Fellow villagers join amicably together, and especially when working in families the strong and weak are mixed in each gang. Where there are particular instances of feeble parties or families the contract rate would have to be lowered so as to enable such people to earn a sufficiency for their proper sustenance. In this system of piece-work the rates would have to be carefully supervised so as on the one hand to prevent some from earning too much and others from earning too little.

As this district is covered with tanks, numbers of which are admirably suited for relief works, the practicability and advisability of piece-work become apparent in its simple earthwork and easy measurements. Even the mere turfing of the slopes of bunds is suitable as piece work.

Major Moncrieff. — Generally I am averse to payment by the piece on relief work, but I think it is worth a trial, if the work is of such magnitude as to be likely to outlast the famine and of such importance as to make it desirable to finish it. Then I would start piece-work if I found a large portion of the labourers inclined for it, and if they were so I would insist on it for all whom in the last question I have called class 1. The system has no doubt great advantages in simplifying payments, &c., and especially the Mysore system of paying in even rupees for a variable amount of work (24 to 8 C. yards) which is simpler than the North Indian system of paying for a fixed unit of work (1,000 cubic feet) a variable price. A good deal has been said of the value of paying by piece-work in the stimulus it offers to the workman; I have not seen that myself. The disadvantages of the system are—

(1.) It introduces a new element on the work, for it is quite easy to do all by task-work and no piece-work, but with labourers in all stages of weakness and strength, piece-work cannot be carried on alone without task-work. This is additional trouble to the officers concerned.

(2.) It prevents the officer from classifying the labourers as he thinks best. If they are to do piece-work they must be left to classify themselves, and the weakly are sure to be rejected.

Colonel Johnson.—I have already said so much about piece-work that I have little to add in replying to this question. It is practicable on all relief works, but would not be applicable to every description of work carried out on each; as for instance, carrying water, consolidating embankments, and a few other minor items. For these, people should be selected and paid on daily hire. Amongst incapables, too, when the quantity and value of work turned out is small and not of importance, the task system would probably be more convenient.

As explained in para. 23 for piece-work, earthwork is measured before it is commenced, and divided into pits of convenient size, each pit being the unit on which payment is made. A duffadar is placed in charge of every 20 or 30 pits, with a certain quantity of tools, for which he is held responsible. He is also provided with baskets which the coolies buy, the cost being deducted from their earnings, as it is impossible to look after baskets, and the coolies will otherwise exchange new for old, burn them to cook their rice with, &c. On a labourer applying for a pit he allots him one, puts down his name, and the tools he lends him. The man and his people do as much or as little as they like. No one interferes with him or his people, except to see that the spoil is deposited in the right place. When he has completed his pit, he tells the duffadar, who sees that it is the proper depth, &c.,

* Vide Appendix No. II.

and allots him another if he wishes for it. About 5 o'clock the subordinate or officer in charge comes round, pays at once in cash for each completed pit, the labourers give up their tools and walk off, or go on with other pits, just as it suits them. There are no rolls, and payment is made to one man or woman instead of to seven or eight.

The advantages of such a system I should suppose must be self-evident to everybody: 1stly. There is no possibility of defrauding the cooly, he knows exactly what he has to do, and what he has to get for each pit. 2ndly. He is perfectly independent, can do as much or as little as he likes; has no duffadar or other person to hustle or drive him, as with test work; there is no object in doing this. 3rdly. His receipts depend upon his own exertions and those of his people. 4thly. He can work when he likes, in the morning or in the evening, and is not obliged to be present at any particular time except to be paid, which moreover he can put off to another day if he likes. 5thly. He can bring all his own people to help or work with whom he likes, and is not obliged to work with people to whom he might reasonably object. 6thly. A spirit of emulation is excited, each party striving to get their pit finished first. Before the kitchens were thrown open, a work (the Durmaboody Tank) was started on these principles, and was most successful. I have never, in the whole of my experience, seen Mysore coolies work in such an enthusiastic manner. The loads the women carried and the pace they went with them excited the astonishment of all that saw them. Contrast this with relief works started afterwards, and no further argument would I think be necessary. 7thly. The principle is so simple that it requires a minimum of establishment. The Durmaboody Tank was supervised by a pensioned sergeant of Artillery who had never been on a work before in his life. The numbers on the work were 4,000 and 5,000, and all the assistance he had was one sub-overseer and a very stupid one too. There are no nominal rolls, pay lists, &c., &c., the accounts being little more than so many pits per diem at so much each. 8thly. The work admits of easy and ready check, the pits are of course all in lines and contiguous, and when a line is completed, a large rectangular pit of even depth is left, a measurement of this does not take a minute, and is at once a sufficient check on the payment made. 9thly. Government get full value for their expenditure, have the satisfaction of knowing that the people are paid according to their deserts, and that there is nothing demoralizing, but, on the contrary, everything elevating in such a system of dispensing charity.

The above are some of the most obvious advantages that may be claimed for the piece-work system; the only disadvantage that can be probably quoted against it is that the whole of the relief work labourers are not able to do the same amount of work, and that rates that would allow of an able-bodied labourer earning ample to support himself would starve a cooly in an enfeebled condition. This is perfectly true so far as it goes, but it applies no more to the piece-work than to any other system. With task-work or payment by daily hire the same disadvantage applies, and the difficulty is, when all are working together, to get the able-bodied to do more than the weakly; the difference is that in the piece-work system he gets paid for what he does, and there is therefore every inducement for him to do his best. In the other systems he is paid the same whether he works or not, and there is no inducement whatever. Under any circumstances, and on all accounts, it appears advisable to segregate the different classes, with small bodies into two, with large bodies, into perhaps three different classes, working clear of one another. The first, the able-bodied, whose out-turn would really be remunerative. The second, those that could only do, say from 50 to 75 per cent. of the full task, but most of whom it would nevertheless be desirable to work on the piece-work system, in order, amongst other reasons, to get them into the way of it. The third, the emaciated and sickly, the only object of bringing whom to a relief camp is apparently to add to its horrors, to make it more revolting and unattractive to the most respectable portion of the community most deserving of relief, and to spread disease and pestilence more widely than it otherwise need be.

The piece-work system is advantageous, and can best be adopted on a large scale in large earth works, such as excavations and embankments; but it is equally applicable to other work, such as collecting, breaking, or spreading stone, digging, or spreading gravel, clearing side or check drains, building stone or brickwork, making mats, baskets, or rope, &c., &c.

The precautions necessary are: 1st. That the officer in charge should know how to work it. A man may be a first-class engineer, but a very poor hand at managing and organizing labour. Our piece-work in ordinary times is done chiefly by petty contract through middle men, and although the principle of working it departmentally is simplicity itself, it is not everyone who knows how to start it, and in such cases a number of needless and objectionable precautions are taken the people do not understand, and that worry and frighten them away from the work. The people can scarcely be left too much to themselves. When the Durmaboody Tank was started some of the most experienced officers prognosticated its failure. It worked without the slightest hitch of any sort or kind from beginning to end, and the man in charge had never had the management of a gang of coolies before in his life. 2ndly. The pit should invariably be marked out over night. Duffadars and tools ready on the spot, so that the coolies are never kept waiting for a pit for an instant. 3rdly. Care must be taken that the pits are excavated to the proper depth, that the spoil is deposited in the proper place, and that it is not thrown down or scattered about on the road. 4thly. Good roads and ramps should be made for the people to go and come upon, and the empties should go back by a different road from the laden coolies. This is necessary on all works, but especially on piece-work, as the coolies thereon will work twice as fast. 5thly. Care should be taken not to pay for pits twice over. The most simple plan of avoiding this is to have a diagram of the pits, and cross or hatch them out as they are paid for. 6thly. The pits should be marked out in zones, as nearly equidistant as possible from where the spoil is to be deposited, so that the rates, which are of course regulated by length of lead and lift, and have to be frequently charged, may be as nearly as possible the same for all. 7thly. In zones of equal rates, the distance being taken from the centre of the zone, the inside pits or those nearest the spoil will of course always have a pull over the outside. A good supervisor will take advantage of this to favour the more weakly by alloting them the inside pits. 8thly. No man should be allotted more than one, or at most two, pits at a time; as soon as he has completed that he can have another. 9thly. By exerting his influence and authority, a good supervisor can materially assist in preventing or settling squabbles amongst the people in the division of their earnings; in fact the coolies will generally accept his allotment, but in this, as in everything else, everything depends upon the tact and judgment of the supervisor. 10thly. It is requisite to have plenty of work ready, for at piece-work the people get through the work very much more rapidly than in any other way. 11thly. The last and most important precaution is that there must be no possibility of the really able-bodied being able to obtain work at easier rates among the 75 per cent. or other classes. If more attractive work is obtainable piece-work must necessarily break down.

It may be asked why, if piece-work is so advantageous in every way, do some engineers consider it inapplicable to relief works? My reply to this is, that under ordinary circumstances piece-work is executed for the engineer by gangs of professional or regular workmen, or through middle men. The works may be measured up and paid for once a week, once a month, perhaps not oftener than once in three months. It must be quite evident that such a system would be

perfectly inapplicable to relief works and the simple method by which it can be made to dovetail into daily payments has probably never occurred to them. As already stated, when it was proposed to start the work on this principle at the Durmaboody Tank, experienced engineers prognosticated its failure. It not only succeeded perfectly, but other large works were started on the same principle afterwards, and were equally successful, one of them under my orders was under a non-commissioned officer of the Sappers, who had never had independent charge of any work before, and he had no difficulty. The objection that during famine we cannot afford to allow the people to earn more than sufficient to support them I consider much more theoretical than practical. There is very little fear, if the rates are fairly fixed, of the majority doing more works than will suffice to enable them to support themselves; the difficulty is rather to get them to do enough. The cumbersome system, additional establishments, grievous waste of time, adopted to prevent people from getting too fat on relief would, in my opinion, far more than cover the cost of all the fattening that is to be anticipated.

In connection with this question there is also the question of middle men. A very large number of middle men had to be got rid of when public works were stopped, but some were taken on again when permission was given to go on with a few of them. I consider the exclusion of middle men a great mistake; they are obliged to pay the same rates and make their works quite as easy as on the relief works in the neighbourhood, or they would not get a single cooly to work for them. These men not only pay their coolies properly, but give them advances; they understand their work and look after it well. They are a most valuable supplement at all times to the permanent establishment, yet when we had a greater demand on that establishment than at any other time their services were discarded for fear they should make too much out of it.

Ch. III Qn. 12. Mysore.

The abuse of piece-work is prevented by the adoption of fair and proper rates. If the precautions above noted be taken there is no other chance of abuse that I am aware of. No practical man would ever be afraid of people coming to work at proper rates who were not obliged to resort to work to support themselves. As regards actual work, I suppose 10, perhaps 100, times as much money has been thrown away by arrangements calculated to prevent imaginary people resorting to works who did not require relief as would have been done if Public Works officers had been allowed to throw piece-work open to all-comers. The arrangements I allude to are the adoption of other systems of work by which the able-bodied were worked down to the incapable level, instead of an endeavour being made to work the incapable up to the able-bodied level. The establishment and time wasted in raking useless nominal rolls, paying people from a toll, &c., &c.

Question 12.—Housing, Sanitary Arrangements, and Discipline on Relief Works.

Ch. III Qn 12.

What is the best form of hut for labourers on the relief work, and what the best method of arranging them in a camp? What is the cost of hutting per head? Should the huts be erected by specially-hired labour or by the relief labourers themselves? What points require consideration in selecting a site for such a camp? What sanitary arrangements should be prescribed in it, especially as regards latrines? What establishment is necessary to look after these arrangements? What police or other establishment is necessary to preserve discipline and to prevent robberies? How should this be organised?

Punjab.—9 answers. A summary of these answers is not attempted.

Bengal.—Ditto.

North-Western Provinces.—Ditto.

Bombay.—9 answers.

Madras.—Twenty European gentlemen have replied.

There is, of course, much variety of opinion in regard to the best form of hut, the cost and materials, as much depends on local circumstances, and as to whether the camp is intended to be permanent or movable.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

Mr. Colvin.—We used no huts except with the inefficient gangs in the rains, and then we had thatched chhappars like an inverted V, 20 to the chhappar. The efficient labourers travelled so fast that a camp would have been very difficult. Dry weather too made hutting unnecessary. In the cold weather the labourers went to the neighbouring groves; in the hot they slept out in the fields.

BOMBAY.

Bombay.

Mr. Hewlett.—For the fine-weather months I think the people should be left to hut themselves. They made very good huts with the branches of trees, the interstices being filled in with brambles; but the huts should be laid out in regular line, and not be crowded together. After the experience I have had, the only part which I should alter in the rules I drew up in obedience to the instructions of Government at the commencement of the famine would be as regards the chulas, which, I think, the labourers might be left to make for themselves. They generally made them close to their huts, and they were never a source of danger or inconvenience.

The points requiring consideration in the selection of a camp are stated in the rules.

The arrangements made for field latrines, which answered very well indeed everywhere, are also stated. All that is wanted is that a trench not more than a foot or less than six inches be dug daily, the earth excavated from it being heaped up on one side. There were no sweepers procurable, so I insisted on a long bamboo with a scraper at the end being kept, and the labourers themselves filled in earth after they had performed the offices of nature. There is nothing in this to injure their caste prejudices, and it only required a little firmness in the commencement to establish this practice. The great success of this plan has frequently been observed by me.

The preservation of water supply is all-essential, and a plan introduced by Mr. Burke at Yewti was a

capital one. There were about 16,000 labourers collected in two camps, between which a nullah passed. This was the source of water supply. The sand in the dry bed of the nullah was heaped up above and below, so as to form a high wall to prevent cattle straying into it, and in the space between the two walls tanks were dug for the various castes—Mahrattas, Hindus, Mhars, &c. There was a guard kept over the tanks, and the approaches to the nullah were kept scrupulously clean.

The more intelligent of the labourers were made policemen for sanitary purposes, and placed over the water supply, latrines, &c. They were distinguised by a piece of red cloth bound round their arms.

The best way to make an inspection of the labourers is to draw them up in one line in the following order: men, suckling mothers, mothers with children, single women, boys, girls.

The muccadums of gangs and karkoons to attend the inspecting officer. As also a cooly carrying in a basket wooden tickets covered with a distinguishing solour—red, blue, yellow; each ticket to have a piece of string through a hole in the top. The inspecting officer inspects each individual, and those who require special treatment are made to fall out. The inspecting officer to give each a ticket (red) to denote the holder to be taken to hospital as an in-patient, blue as an out-patient, yellow to be fed at the relief kitchen, once, twice, or three times a day, as the case may demand. Each person who requires special treatment to be taken to a selected spot, where his name and other particulars are to be entered.

During the rains other arrangements for hutting the men must be made, and the cheapest form of hut, I think, consists of date matting dammered over. These huts were large enough to hold twenty people, and the sloping sides came down to the ground, which was raised, a trench being dug around with drains to carry off the storm water. The supports were bamboos.

Mr. Hart.—The ordinary separate hut formed by the labourer himself is, I believe, all that is necessary. Rafters, bamboos, and mats or grass should be supplied, and the position of the camp should be settled, in accordance with the instructions of Sanitary Commissioner.

Police furnished from the force, or supernumeraries supplied by the police officers, should be employed, and the organisation carried out by this establishment.

Colonel Jones.—Points in selecting a camp are—

1st. Proximity to good drinking water.
2nd. Not too far from the work upon which the labourers are employed.
3rd. Facilities for obtaining food and fuel.
4th. Facilities for constructing field latrines.
5th. Surface drainage.
6th. That the camp should not be a source of danger to the neighbouring villages in case cholera or other epidemic disease breaks out amongst the people.
7th. Below the source of water supply.
8th. Elevated ground, and not too near nullahs, if available, should be preferred.

The huts should be raised on an earthen platform one foot high, and face north and south in the Deccan. A trench should be cut on each side of the huts for surface drainage. The latrines should be at least 800 yards from the huts, to leeward of the camp, and not near the wells or other sources of water supply. Where the soil admits, trenches not more than 6 inches deep should be excavated daily. For 500 persons two trenches of 100 feet long will be sufficient.

The trenches should be filled in every evening and fresh ones opened the next morning.

Nullahs should never be used as latrines.

The huts should be arranged in rows.

Cost of hutting per head, about a rupee and a half (Rs. 1-8-0), exclusive of cost of carriage to site.

The huts should be set up by the relief labourers.

For about 8,000 people twelve muccadums are sufficient for sanitary purposes.

For large camps a special police guard should be entertained, but for the smaller camps a few chowkedars are sufficient. (*See Diagram opposite.*)

General Wilkins.—The best form of hut is that ordered by Government, which consists of bamboos and bamboo and date matting. Grass was not procurable excepting near the jungles. Palm and teak leaves or other large leaves laid over matting made good roofs. Double layers of bamboo matting, tarred, the layers placed six inches apart, made a good and durable roof in wet weather.

The huts were erected by the people themselves, aided by carpenters specially hired or found amongst the people.

Camp sites should be carefully selected by the officers of the works, and placed on high sloping ground at a distance from any watercourse, which if close at hand is very soon defiled by the people.

The people should be prohibited from cooking in the living huts. Cooking huts should be provided at the end of each line of huts.

Latrines should be to leeward of the camp, and new trenches should be opened almost daily.

No burials should be permitted anywhere near a camp, and the appropriations of nullahs as burying-places should be strictly prohibited.

The camps should be under the care of a headman, who should have an establishment of a muccadum and four village policemen, with a few low-caste people to fill in and dig the latrine trenches.

Huts 30 by 10 feet will accommodate 20 people.

The cost of hutting varied from 12 annas to 2 rupees per head. There was not much hutting in the Southern Division.

The camps should, of course, be under the charge of the officers of the works.

Mr. Spry.—The form of hut for relief labourers must depend entirely on the materials available, and no specific rule can be laid down. During the famine here date branches and date matting were largely used, because grass for thatching was not procurable. The huts can best be erected by the labourers themselves, and at little or no cost, provided materials are procurable. If they have to be brought from a distance, the cost may be great and must vary according to circumstances. The best arrangements for a relief camp are, I think, those laid down by Dr. Hewlett and circulated with Government Resolution Public Works Department No. 237 Civil Works 937, dated 1st December 1876 I think that for every body of 1,000 labourers there should be a police guard of a head constable and six men, and they should belong to the regular Police Force for the district. Temporary men engaged are but little good.

Mr. Moore.—The camp system sketched by Dr. Hewlett is the one which was adopted in this district, and it answered very well.

Mr. Hamilton.—As relief labour seldom goes on in continuous rain, I should let labourers make their own huts, which they soon do by excavating a square room and covering it over with coarse cloths supported by twigs.

Colonel Anderson.—Huts 50 or 60 feet by 13, 10½ feet high at the ridge and 4 feet at the post plates, is a convenient size, with an opening at each end and two on each side. But much depends on the materials available. Cost must similarly vary with locality. Huts should be erected by the work-people; the less able-bodied can do good service in much of this work. Huts should not be too close to one another or many massed in one block. Site of course on hard soil near water, and though elevated not exposed to the force of violent winds; nothing renders a work more un-

popular. On sanitary and police arrangements leave opinion to specialists.

Mr. Robertson.—The form of hut can be best stated by the officers of the Public Works Department. They might be arranged in echelon on the plan laid down by Dr. Hewlett, but with less space between the rows of huts. A camp on his plan took up far too much room, and was difficult of supervision. The distances between the huts might without any harm be lessened, and then Dr. Hewlett's plan would suit well. The cost per hut must depend on the price of materials at the time. During the famine grass was very dear, and bamboo matting had to be used in many places to save expense. As dry a site as possible, not far from water, should be selected for a camp. Latrine trenches should be dug, and a staff maintained to attend to them. The District Police Force will enrol such extra police as may be necessary, and attend to discipline, &c.

MADRAS.

Mr. Longley.—The best form of hut for laborers in a relief-camp is a simple lean-to in the shape of a Δ 8′ × 8′ built of bamboos tied together at the top, the ends being forced 6 inches into the ground and covered with bamboo matting or palmyra leaves. Each hut will hold a family of five. They should be arranged in rows of ten or twenty huts in a row, according to the number accommodated, each row 20 feet apart and the huts in each row 8 feet apart.

The cost of hutting will be about 5 or 6 annas per head.

The huts should be erected by the relief-laborers themselves, they being supplied with necessary materials.

Position, direction of wind, drainage, and water-supply. The position as a rule should be to the leeward of the relief-work, and, if the nature of the ground will admit of it, the camp should be in a lower level than the water-supply to save the latter from pollution.

Mr. Grose.—I have found a lean-to shed the most economical, and it is as popular as more substantial forms. I found it best in the end to construct sheds after the plan described in Appendix K, under which paupers can be hutted at Rupees 2¼ a head. It is quickest and cheapest to use skilled labor in setting up the huts, and artisans who do this kind of work are seldom driven to relief-works. The site of a laborers' camp should be on high ground near good water and the work, but at some distance from any village.

The police guard must vary with the size of the camp, beginning with a head constable and three constables, which is sufficient for a laborers' camp containing, say, 1,000 men, but more will be required to watch the people at work and the cash chest.

Mr. Crole.—The best form of hut for a working camp is a small lean-to, made of mats or leaves and bamboos or split palmyras; size about six feet square, which is sufficient for a family. The cost of hutting varies, but should, under no circumstances, exceed one rupee per head. The huts should be erected by the coolies themselves. High well-drained ground to leeward of the work should be selected for the site of the lines. Latrines should consist of long shallow trenches, to be gradually filled up as used by the coolies themselves. Police and toty establishments are only required on very large works. They need never be large.

Major Baynes.—The most convenient form of construction is a hut resembling a rowtre; it requires only two upright posts, one ridge-pole, and six rafters which run from the ridge-pole to the ground; three on each side the roofing and end walls should be made in the form of hurdles thatched with the most easily procurable material; these only require to be laid on the frame-work and tied firmly to it. The huts should be fifteen feet by ten feet in area, the ridge-pole should be nine feet above the ground. Such a hut will accommodate six adults and three children and their cooking utensils, &c.; the advantages of making them thus small are facility of construction and removal, of supply of materials, and their suitability to family groups. In the event of its being necessary to shift a camp, the inmates of such a hut can untie it and carry it along with them. The camp-site of each division will have to be sub-divided like the poor-house into separate quarters for caste persons and pariahs' huts. In each sub-division the huts should be placed in rows with intermediate roadway of twenty feet and with only space between each hut sufficient to allow of a foot-wide drain to carry away rainfall from the roofs. If placed further apart, the inmates will commit nuisances between them. Each row of huts should be allotted to a gang. Twelve huts would be required for a gang of 100 persons; of these huts some must be allotted to families, single men, and women.

In close vicinity to this camp an enclosure, with kitchen and day-shed, must be constructed for feeding and lodging the non-working children of workers. To superintend this a gumastah will have to be appointed. The cooks and children-nurses must be selected from some of the female workers of each gang; their number must, of course, vary with that of the children. The total number in each camp should be regulated by the number of gangs allotted to an overseer (see under Question XVII.); this number is assumed to be sixteen. In this way the inmates of the camp form little divisions, each with its own staff of overseer, paymasters, and gangsmen, and can be more easily handled and supervised.

The cost of hutting must depend on local circumstances; my average per head was 8 annas.

The huts should be constructed by contract; this is the best and cheapest agency; certainly not by the relief laborers, because it is most essential to the health and general well-being of the cooly that their hutting should be *ready* for them on arrival. I have a painful remembrance of the confusion and sickness which was the result of massing coolies before shelter was provided for them.

The points to be considered in selecting camp sites are capability of drainage, sloping site, vicinity to wells of drinking water, or feasibility of sinking them, nature of soil, convenient site for latrines, access by cart-road, vicinity to a tank for purposes of ablution, &c.

With regard to latrines and sanitary arrangements the same general principles as those laid down in paragraph XXIII, section II, will of course be applicable also in this case. A good plan for enforcing the use of latrines is to make any member of a camp actually seen committing a nuisance in the camp precincts remove it outside the enclosure and bury it, or fine all the adults of a hut near which excrement is seen six pies each, which should go to the scavenger fund, and also to make any person found committing a nuisance in the vicinity of the camp bury his deposit.

One scavenger to every gang will be required to keep the latrines swept; the area allotted to latrines must be large enough to allow of fresh portions being taken up.

One warder to every gang should be on duty when the camp is occupied by the coolies. Their duties will be similar to those laid down for warders in a poor-house in paragraph 27, section 2, with the exception of obvious details which need not be stated.

When 3,000 coolies are collected the presence of a police guard is, of course, necessary, but their interference with the coolies should be limited to the ordi-

nary duties of a police officer. They would also have to furnish a guard over the cash-chest, and a constable should be on duty at each arrack shop to see that the rules of license are not infringed.

Lieut.-Col. Hasted.—I think that all our people preferred small beehive huts constructed by themselves to any other description of shed. Our best camps were rows of these huts with good wide streets between them, faced so that the prevailing winds should blow through the streets, and with a drain down each. We selected open ground, with a good fall for drainage, and in the vicinity of good water; the latrines, which were simply screens of wattle, or palmyra leaves round trenches, which were filled in and renewed from time to time, we placed at a little distance on the side from which wind was least to be expected. A police guard of three men should be sufficient for each camp of 1,000 coolies.

Surgeon McNally.—The form and materials of relief laborers' huts must necessarily vary according to the materials available, the climate of the place, and the manner in which the laborers are grouped. In districts where bamboo jungles exist, bamboo matting, plastered with mud or cow-dung and tarred, is a light, cheap, portable, and durable material. It can easily be covered with a thatch of grass or leaves if necessary.

The points requiring attention in the selection of a site for a relief-camp are much the same as for a military encampment. They will be found described in certain military and hygienic text-books. The most essential requisites for a labor-camp site appear to be: (1) sufficient open space freed from brushwood, (2) clean surface, (3) good drainage, (4) good and abundant water, (5) ready supply of food, (6) distance from, or windward of, any unavoidable nuisance or likely source of disease, (7) vicinity of work. Mobility should be regarded in the construction of labor-camps. It may be necessary to move them on account of epidemic disease, fouling of the ground, progress or completion of the work, cessation of distress in the locality, difficulty in obtaining food or water-supplies.

In no case should a camp contain more than 1,000 individuals. At large works separate camps should be constructed for every 500 or 1,000 laborers.

Relief laborers should be employed in the construction of camps and also, as far as possible, in their management.

Two forms of labor-camp suggest themselves—the first consisting of small huts to accommodate families, the second of large sheds to contain gangs. A standard plan suitable to all places and circumstances is scarcely possible, but I consider that the accompanying plan—*mutatis mutandis*—would be a good model for such camps. This rough plan exhibits a suitable *échelon* arrangement for groups of huts or for sheds. Where there is ample ground space, a more extended arrangement would be preferable.

Camp for families.—Taking the average family to consist of five individuals, a camp for 1,000 people would contain 200 huts. These may be conveniently arranged in batches of ten as represented in the plan. Each hut would consist of a light arched framework of split bamboo, strengthened, if necessary, by a stake in centre of arch at each end. This framework should be covered by a single piece of matting, or by several over-lapping pieces, tarred as described. Light detached semi-circular mats might be provided to cover one or both ends, leaving a ventilation space of at least 6 inches below. These huts would resemble Nilgiri Toda huts with open ends. The floor space of each hut should be 13 by 6 feet, and the height in centre of arch 5 feet. Each group of ten huts placed side by side would occupy a platform 60 by 13 feet, raised according to the nature of the soil and the climate. Small drains would be required between the huts; an inch or two off the width of each hut would leave room for them.

Camp for gangs.—It would be difficult to devise a more suitable pattern of shed for camps of this kind than that adopted in poor-houses ("relief-camps") during the recent famine. For a relief-camp, however, where little more than night shelter is required the model need not be so lofty or substantial. The dimensions for a shed to contain a gang of 50 adults should be: length 75 feet, width 13 feet, height in middle 9 feet and at sides 3½ feet. The floor should be raised according to the nature of the soil and the climate of the place. Puddle, covered with clean sand an inch or two deep, makes a good floor. The eaves of the roof should project at the sides and at each end sufficiently to prevent rain from beating in. The sides may be formed of movable mats, which should be raised in fair weather. For mixed gangs, *i.e.*, gangs containing a certain proportion of men, women, and children, a matting partition could be placed in each shed to separate men from women and children. The first plan of camp with small arched or ∧ shaped huts would be preferable, whether for gangs or for families, in all cases where a *movable* camp is required.

Latrines should be of the simplest possible construction. The most suitable would be a simple enclosure of 6-feet matting within which trenches 7 inches wide, 18 deep, and 5 feet apart should be made. The earth dug out of these trenches should be heaped up in the middle of the 5-feet span between them, so that this space might not be defiled. A sufficient quantity of this earth, or of earth kept dry under shelter, should be thrown into the trenches morning and evening. When the accumulation fills them to 6 inches from the surface, they should be completely filled in with earth, and new trenches be dug in the interspaces. When these have been filled in like manner the enclosure should be moved to fresh ground.

A more permanent form of latrine must necessarily be adopted for enclosed poor-houses. Besides the latrines it will be necessary to supply urinals for night use. Earthen pots or tubs, tarred inside and out, are suitable for this purpose. One should be placed near each end of every shed or group of huts. Two scavengers ought to suffice for the conservancy of such a camp.

If a hospital be attached to a camp, or aggregation of camps, it should be quite separate.

MYSORE.

MYSORE.

Major Scott Moncrieff.—In Mysore we found the most popular hut, one adopted from works in the Sholapur District. Its ground area was 9′ × 6′, and it was 4½′ high at the ridge. Its frame work consisted of two pairs of light bamboos stuck into the ground 6′ apart, and tied together where they crossed. A fifth bamboo formed ridge pole. The sides consisted each of a bamboo matting 9′ × 5½′. Over the top was bent a third matting overlapping them. A drain was cut all round, and the earth formed a raised floor within. One end of this hut was closed with a mud wall. Each hut was supposed to contain a family. They were placed 2′ apart in regular streets 50′ wide, and in camps containing not more than 600. The labourers themselves should erect the huts, and be paid for doing so, but they will require some men with cleverer fingers than themselves to make them look as tidy as they should. The cost of hutting per head should be about one rupee. This form of hut would not do for

relief works in the cold weather in Northern India. Something warmer would be necessary. A camp should be near the work, on elevated ground distant from nullahs and ravines, with an abundant supply of good water so situated that the camp should not drain into it. If an open tope of trees is to be had the camp should be placed there. Fuel ought to be procurable. There should be soft ground at hand (best of all a field) for digging latrine trenches. These ought to be 500 feet to leeward of the camp, one for each sex, daily dug in long lines, 1' deep, and daily filled in and fresh ones dug.

A few police must be entertained to enforce the use of these latrines, and a few sweepers, to see that all is kept clean and not a bad smell in the place.

Ch. III. Qn. 13 — Mysore.

Question 13.—Bazaar Arrangements in connection with Relief Works.

Ch. III. Qn. 13.

What arrangements do you recommend for a bazaar? Should an arrangement be made with one man to supply the labourers on certain specified terms, or should any traders who wish to do so be permitted to open shops? If the supply of traders is for any cause insufficient, what steps should be taken to induce persons to open shops, or otherwise to provide for the sale of food, &c.? Where should the bazaar be located? Should the huts be erected for the traders at the cost of Government or at their own cost? Should any supervision be exercised over what they sell (for instance, to exclude luxuries or unwholesome food), or over the prices as which they sell? and, if so, in what way? Should they be allowed to keep their shops open all the day or only when the labourers are off work?

Punjab.—Any traders, and they may put up their own shops. If they fail, Government will come in and sell grain.

North-Western Provinces.—Similar to Bombay.

Bengal.—Similar to Punjab.

Bombay.—10 replies. General opinion that all or any traders should be allowed to open shops. That a site should be allotted, and the traders build their own shops. That there should be no interference, except to exclude unwholesome grain and false measures. That the shops should be open all day. Government should not import grain unless it is absolutely wanting, or to put down a conspiracy to raise prices.

Madras.—Fourteen gentlemen (Europeans) have replied.

The general opinion is that in most cases the ordinary local trade and the periodical markets will meet the requirements of the labourers on relief works. Free trade is recommended as a rule, but where the wages of the labourers fluctuate with the price of grain, under what is known as the sliding-scale system, care must be taken that the bazaar men on the works do not avail themselves of the circumstance to run up the prices unduly. The sale of unwholesome food should be prohibited.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

Mr. Colvin.—All this must depend on circumstances. None but a simpleton or a secretary would recommend one rule for general application. The supervision exercised was to put a tahsil chaprasi in charge of each shop or group of shops; and hold him responsible for reporting the quality of the flour to the officer in charge of the works. Complaints were loud enough if bad grain was sold. Luxuries we found were not in demand at famine wages.

Mr. Lawrence.—A bazaar attached to a camp is necessary; a monopoly should not be given; any traders who wish should be permitted to open shops. To induce them to do so, huts should be erected for them near the camp, and an allowance be made them to cover extra expenses on condition of their selling at ordinary bazaar rates, which should be daily proclaimed in the camp by touch of drum. At Agra the allowance was one anna per maund of flour or gram sold. A Government official should exercise supervision over the traders to guard against overcharges or sale of bad food; also to see that a sufficient supply of proper food is in stock. For instance, when wet weather comes on he should see that the traders have an ample supply of parched gram, as the paupers will not be able to light fires to cook. It may be left optional to the traders whether they keep their shops open all day. Shops for sale of parched gram should be open at the works all day.

BENGAL.

Bengal.

Colonel Burn.—If private trade and enterprise be considered sufficient, as hereafter I opine it will be, leave the supply to be controlled by the demand. Even if Government are compelled to import grain, I would advocate selling to grain-dealers not all in one place to one man, but if possible to several. There will also, except under very disastrous circumstances, be always grain in the country at the outbreak of a famine. Interfere as little as possible with trade; but where there is no hope of such coming to the front, then Government or the Zemindar who is relieving his tenantry must establish their own grain shops.

Mr. Kirkwood.—Any traders who may wish should be permitted to open shops near the works. If the supply of traders is insufficient Government should provide food and condiments, &c., according to the requirements of the people, at a shop on the works, managed by a paid servant, who should sell at certain fixed rates to the labourers only, and to no others. Where trade is brisk traders should be left to put up their own shops; where it is lethargic and requires some stimulant it would be wise for Government to provide the shops gratis at a suitable spot near the works. I would not subject the traders to any supervision, further than to insist (*a*) that their rates are not higher than those in the country around; (*b*), that their supplies are sufficient, and of the quality and kind required by the labourers. Whenever these conditions may be contravened Government should step in as the trader, in the person of its paid servant, as above suggested. I certainly would not forbid the sale of luxuries. The traders should be allowed to keep their shops open all day. When Government has a shop it should only be open when the labourers are off work.

BOMBAY.

Mr. Hewlett.—I should leave the traders to build their own huts on a site selected for them, and they should be made to conform to all sanitary arrangements. I think the greater the competition the cheaper will be the price of grain. A strict supervision should be kept to see that they do not sell unwholesome food. Some sickness was caused until this practice was stopped.

General Wilkins.—The sites of the bazaars on works should be fixed by the officer in charge of works.

Perfect free trade should be permitted, and encouraged; but the shops should be situated in places set apart by the officer. The shops should be placed either near the quarters of the Police, or close to the Government establishments, tool chowkies, carpenters' and blacksmiths' shops.

The grain shops should not be placed in the camp amongst the huts of the work-people. Indeed the traders will not open shops in the lines.

If there is any competition, it will be unnecessary to do more than give the sites to the grain sellers; they will put up their own shops.

The grain sellers and all shopkeepers should be permitted to keep their shops open all day.

Mr. Propert.—In the case of large works I would recommend that traders be allowed to open shops as they choose. If ordinary competition fail to supply sufficient grain, arrangements must be made with specified individuals to sell at a rate to be agreed upon. Unwholesome grain should, I think, be forbidden, although certain poor classes, if prices be at all high, habitually and of their own free will use grain which might be condemned as bad by inspecting officers. Famine, however, begets disease, and in times of scarcity the use of the best possible grain should, in my opinion, be insisted upon by those who draw pay from Government. I would not without due reason insist upon banias' shops being opened or closed at certain hours.

Mr. Norman.—I would interfere as little as possible with traders. Any person who wishes should be allowed to open a shop, and, as a general rule, provided they are allowed to charge their own prices. The only precautions necessary are to take care that no grain positively unfit for food is allowed to be sold. The site of the bazaar should be at some little distance from the camp according to the nature of the ground. Government should provide shelter for the traders if no means are at hand to build huts cheaply and inexpensively. The traders should be allowed to keep their shops open all day if they so desire it. Provided the traders are permitted to charge their own prices, it will not be necessary to offer them any other inducements to open their shops. It may, of course, happen that grain is not procurable, and in that case Government might be compelled to become importers and to pay the labourers in grain. Nothing of the sort occurred during the last famine, nor is it likely to happen in this district, where communications are good, and the village traders, who are chiefly Marwaris, are an enterprising race.

Mr. Spry.—I think that free trade should be allowed to prevail as far as possible. I would let all traders who wished it open shops and would encourage competition.

If from a determined combination amongst grain holders, as occurred in this district in October 1876, or from paucity of supplies, the people cannot get sufficient food, Government must itself import grain, as it is bound to see that the people get that.

A plot of ground should be allotted for a bazaar at a convenient distance from the work or camp. The ground should be regularly marked out, and traders allowed to make their own huts thereon, the only condition being that they do not sell certain specified articles which may be looked upon as luxuries or unwholesome. On the prices charged I would make no restriction, but leave that to free trade, nor would I make any restrictions as to time of sale. Over this bazaar there should be a police guard to keep order, and to protect the traders.

Mr. Charles.—Any traders who wish to do so, should be allowed to open shops, but the official in charge of the camp should have power to turn away any trader found selling rotten grain, or insisting on exorbitant prices.

A supervision should be exercised over the traders to see they do not use short measures, as it is very important the labourers should get full measure.

Luxuries need not be excluded. An occasional relish may do a man's health more good than the extra amount of solid but distasteful food he might have bought. No interference should be allowed with the hours of sale.

Mr. Hamilton.—I never experienced any difficulty about the bazaar, and banias were always ready to come and sell at the current rates. I should lay no restrictions on them except as regards bad grain. Of course the police must look after this matter.

Mr. Percival.—The traders should be left to set up their own shops and manage everything themselves. It may be necessary to provide a site. Supervision is required to prevent the sale of unwholesome food and the use of false measures. This will be provided by the police and the Revenue Department. The shops may be open whenever the people please.

Colonel Anderson.—Would arrange bazaar purely by free trade principles, leaving it open to all traders to sell within fixed hours; they would come freely if fairly and reasonably dealt with. If they did not come, would examine reason assigned, and expect to find the solution of the difficulty. Traders should provide their own accommodation ordinarily; in special cases a small hut or two might be erected for them. Would forbid sale of manifestly unwholesome food on pain of expulsion from camp.

Mr. Robertson.—I recommend as little interference with the bazaar as possible; it should be under control as to its sanitary arrangement and form. The traders will in most cases construct their own huts, but in some places this must be done by famine labour. There should be no interference with prices or with what they sell, except only as regards the quality of grain, no unwholesome grain being permitted to enter the bazaar. If a trader has a monopoly and fixes his prices too high, then the district officers should arrange to introduce a competitor. Of course, if driven to it, Government would be obliged to bring prices down to the market rate by itself selling grain, but Government should interfere only when absolutely driven to this step on any particular work. The traders should certainly be allowed to keep their shops open all day.

MADRAS.

Mr. Grose.—There should be free trade so far as possible, but, if there is any difficulty in getting traders to come to the spot, they may be induced to do so by giving them huts, or in some such way, and a great deal of discretion should be allowed to the officer in charge in this respect. They must be restricted to the market price of grain by the assurance that Government will at any moment get grain and sell it at the proper price if they do not. Unwholesome food and intoxicating or narcotic liquors and drugs should be excluded, and the medical officer in the neighbourhood or the officer in charge of the work should see to this. I do not think there should be any restriction as to the time at which the shops may be open.

Mr. J. G. Horsfall.—*Clause II.*—I would permit any traders who wished to do so to open shops.

Clause III.—The fullest information should be given to traders, and full assurance of protection to person and property as well as non-interference with free trade.

Clause IV.—Conveniently near to the huts and to police station when there is one.

Clause V.—I think for the sake of complete control they should be erected at the cost of Government.

Clause VI.—The only supervision needed is that they be kept ordinarily clean, and that the food sold is not unwholesome. Prices should not be interfered with. The medical officer, if there is one attached to the work, should daily inspect bazaars and the commodities sold there to see that they are not unwholesome. If there is no medical officer, this must be done by the officer in charge of the work. Of course intoxicating liquors and drugs should not be allowed.

Clause VIII.—Yes. They should be entirely unfettered.

Mr. Longley.—Where the work is not adjacent to a large bazaar, shedding must be provided for the bazaarmen.

I would not make the supply a monopoly by confining it to one person. I have always found it sufficient to notify the need for a bazaar, and merchants gladly avail themselves of the opportunity to trade.

I do not contemplate the possibility of the supply of traders being insufficient.

The bazaar should be near the work.

Hutting should be provided at cost of Government.

Supervision over the quality of food sold is needful. The medical officer in charge of the work or the European engineer in charge can see to this. There is no need to exercise supervision over the sale of luxuries; such little luxuries as tobacco and betel are *necessities* to some. In matters of diet I would let them choose for themselves so long as the so-called luxuries were not unwholesome. The bazaarmen should be permitted to choose their own prices, the wages to the laborers being regulated with reference thereto.

There will be competition as the market will be thrown open to all, and the prices ruling in petty bazaars at works were not found to be more than a few pies dearer than at the market cusbah.

Shops should be open all day. The coolies generally have some relation or child who will make their purchases and cook their food.

Major Baynes.—As a rule natives do their shopping at the weekly fair or "Santhi"; if there is a market town within a couple of miles of the camp, there will not be any necessity for instituting a market for the coolies. I would not advise entering into any stipulations with the dealers; if they find a sale they will supply grain; if they do not, it is evident that the coolies can procure what they require on more favorable terms elsewhere. The only interference (supposing there is no famine of grain) I would advise is that required to check a combination to demand exorbitant prices, which dealers are always ready to do, because the wage of the coolies must vary with the price of grain, and as the dealers are *indirectly* selling to Government, they run up the price unnecessarily, so that I should not permit any dealer to erect a shop on camp limits, except under the restriction that he sold at Government rates, and if the civil officer found he could procure grain cheaper than at the local prices, he should do so after warning the dealers, and dispose of it as suggested in paragraph 5, Chapter II. Hawkers of parched grain and unripe fruit should not be allowed within the cooly lines. If shops are erected, the provisions exposed for sale should be inspected, and if bad should be destroyed; the shops should be closed from 9 A.M. to 5 P.M. I should have a certain number of licensed arrack shops for the sale of wholesome liquor to be consumed on the premises; limit of quantity to be sold and times of sale would be mentioned in the license. These shops should be under the charge of the police. I think the ability to procure a good glass of spirits is very desirable; a wholesome stimulant taken in time will often check diarrhœa and fever arising from a chill.

MYSORE.

Major Scott Moncrieff.—From my experience the trader does not want much inducement to set up a shop at a camp. Should there be a difficulty about the matter he should be helped by the free carriage of his grain from the next town or even by a small monthly wage. Any trader that likes to come should be allowed to do so, but he should be given to understand that he must obey camp rules. If for instance it has been found that he is selling unwholesome trash, and that the coolies are buying it, the officer in charge should stop it, but this will not happen often. Government should give the traders their huts. Prices should not be interfered with in general, but if it is found that he is taking advantage of his position to charge more than he should, he should be warned to desist or turned out of the camp. This must not be done, however, without full consideration.

Colonel Johnson.—The bazaar arrangements should on no account be entrusted to one man. As a rule, more traders will not apply than it is desirable to accommodate. The amildars can generally be depended upon to send traders if they do not come of themselves. The bazaar should be situated between the pay place and the lines. The bazaars should be erected at cost of Government. The sale of unwholesome food should not be permitted. If they bring it after being properly warned it should be confiscated. The bazaar should be kept open all day.

Ch III Qn. 14

Question 14.—Hospital Arrangements in connection with Relief Works.

In what cases should a hospital be attached to a relief work? What system of sanitary inspection of the labourers is desirable? How far should the sick be treated without being sent to hospital? If there is no hospital, what arrangements should be made for those who fall sick? When a hospital is necessary, what should be the shape and material of the sheds, what space should be allowed to each patient, what clothing, bedding, &c., what provision should be made, and what class of people entertained for cooking and nursing? What professional supervision should be provided over the hospital assistant? What authority should be exercised over him by the Public Works Department officer, or the civil officer in charge of the work, if there is one?

Punjab.—A hospital may be opened where the labourers number 1,000 and are hutted on the works, if there is no other hospital within six miles.

North-Western Provinces.—There should be a hospital where a gang of labourers numbers over 100. Details given.

Bengal.—Same as Punjab.

Bombay.—11 answers. A hospital should be attached to every large relief work. The rest of the answers cannot well be summarised.

Madras.—Twenty-two European and 2 Native gentlemen have replied to this question.

The general opinion is that every large work should have a hospital attached.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Dr. Logg.—A hospital should be attached to a relief work whenever a gang of labourers is over 100; it is essentially necessary that the labourers should be inspected by the hospital assistant in charge, at least once a day; in the morning before they go to work would, I think, be the best time, because he could then pick out the sick and weakly, and recommend their being sent into hospital for treatment, or put to some lighter labour, such as sweeping, and keeping the camp clear of rank weeds in the rains. The slighter cases of sickness might be treated out of hospital, but the more serious cases, such as those suffering from diarrhœa, dropsy, &c., which denote failing of the system, should at once be put under treatment in hospital, and given more nourishing diet than the ordinary rations of flour cakes and dall, viz., such as meat, milk, &c., with a certain amount of stimulants, if found to be necessary to support the powers of nature. In the absence of a hospital the sick should, as far as possible, be sent to the nearest dispensary or hospital. When a hospital is necessary, it would, I think, be best to have one long room to accommodate about 20 sick, allowing 50 feet superficial and 1,200 cubic feet space for each patient; the ground on which it is erected should be slightly raised, with a gentle slope towards the side walls. It should have a pent-roof made of grass and bamboo, with the sides and ends of some coarse kind of matting, which in the winter ought to be plastered with mud and cowdung to ensure greater warmth; and for ventilation it should have a door at either end, with a couple of openings for windows in each side wall; both doors and windows to be provided with tât purdahs, to keep out the heat by day and cold by night. The clothing and bedding necessary would depend on the weather; in summer a quantity of dry straw, or a coarse mat, for each patient would suffice for bedding; the clothing for males should consist of either a dhoti or pyjama, and a kurtha, with a sheet to cover with at night, all made of coarse gharra cloth; for females a lehnga, kurta, and sheet; in the damp and uncertain weather of the rains a blanket should be added, and in the winter a common native charpoy and two blankets would, I think, be necessary, everything of course being dependent on the amount of funds available. The cooking and nursing of the sick might easily, I think, be done by the labourers themselves, two or three being detailed for the work from among them, say a kahar, if there be one, to draw and carry water, a Brahmin to cook, and another man to attend on the sick, letting the work they do count as labour for them; and to prevent these berths becoming sinecures, the men so employed might be changed every month or fortnight, at the discretion of the officer in charge of the gang, and the recommendation of the hospital assistant, who should, as a rule, pick out the more weakly men of a gang for this work. If the relief work is any way near the sudder station of a district, the Civil Surgeon should visit it often, and the hospital assistant be placed under his professional supervision; otherwise the Public Works Department officer, or the civil officer in charge of the work, should control the hospital assistant, except in purely professional matters, in which he should be left unfettered.

From want of experience I am unable to give any answers to the remaining questions of this section.

Bengal.

BENGAL.

Mr. Magrath.—Hospitals should, in my opinion, never be attached to relief works. They should form part of the poorhouses, whither those who fall ill should at once be sent from relief works. A few simple medicines should be provided and left with the superior staff for sudden illness, such as colic, fever, &c., and an old charpoy or so would be all that was necessary to keep for transport of sick. The hospitals should be long straw huts, sufficiently wide for people to lie on either side with their feet turned towards the ridge poles, a sufficiently wide lane being left in the middle for passage, about two feet should be left between each patient, the ground should be of beaten earth *leeped* with cowdung and mud. There should be no bed but straw and two blankets for each man. One or two intelligent "kuhars" for the Hindus and a Mussulman for the people of his faith, with about one sweeper to 50 beds, would suffice. If, as was the case in Tirhoot, Mussulmans are few, the nurse can also cook for the Mussulman. The poorhouse cooks will always do the cooking work; and if numbers are generally small, the Hindu nurse can also perform the work of compounder. The hospital assistant must be, of course, under the civil authority, but he need

not be under the Public Works Department more than that he should be bound to take any sick person in on requisition from the Public Works official.

The professional supervision must, of course, be that of a European surgeon properly qualified, who will continually visit the poorhouses and inspect the condition of the labourers on the works.

Mr. Kirkwood.—Wherever there is not within about six miles of the works a regular dispensary, or special relief hospital opened to meet the cases which a famine always calls into existence owing to bad and insufficient food, it will be necessary to open a small hospital in the neighbourhood of works. This, again, will not be necessary unless the number of persons employed is 1,000 or more, and they are hutted on the works, instead of returning to their homes of an evening.

I would have the labourers inspected weekly by the native doctor in charge of the hospital, whether that hospital be specially opened for the works, or be one already existing in the neighbourhood. If the labourers are within easy access of their homes and are consequently not hutted on the works, I do not think any hospital or regular medical inspection necessary; though every medical officer passing the works at any time should make a short halt and correct any insanitary conditions, or look to any cases which the gangsmen or the overseer may bring to his notice. The medical reports should in all cases be despatched at once to the civil officer within whose charge the work may be situated. If such reports tend to show a want of improvement or a falling off in the condition of labourers, or the existence of any epidemic, a superior medical officer should be requested to visit the works and report. His recommendations as to an increase of wage, &c. should be at once acted on, unless sanction from some higher authority be necessary, when that sanction should be at once applied for.

BOMBAY.

Mr. Hewlett.—I think a hospital and a kitchen should be attached to relief works in all cases. All labourers on coming to the works should be inspected by the medical subordinates. At all large relief works (5,000 and upwards) there should be an assistant surgeon.

The whole gang of labourers should be inspected once a week. This may either be done on Sundays or as the executive officer in charge finds most convenient. I do not think the question is what material should be used for a hospital, but rather what material is available. In the relief hospital I had put up at Sholapur in September 1877, each hut consisted of grass tatties supported by jungle wood uprights and cross-beams, and 100 feet long by 20 feet broad, and was intended to accommodate 50 patients. A superficial area of 40 feet was consequently allotted to each patient, but the sick were so numerous that the sheds were at times overcrowded. Each patient had a cot and a piece of date matting and a cumblie allowed him, but this was an exceptional case to meet a great emergency.

In relief camps where there are not many sick, I think a hut of the dimensions as above given would suffice, and a few cumblies, say 25, might be kept in stock. This number could be augmented as occasion demanded, but the patients for the most part bring their own cumblies. Very good beds were made of clean kurbee, but for bad cases country cots should be procured; but this will add to the cost.

The patients were attended by their caste fellows and by the hospital establishment, but one man should be told off as cook. The Sanitary Commissioner and the Deputy Sanitary Commissioners exercised professional authority over the hospital assistant, but, of course, he should obey all orders given him by the officer in charge of the work.

General Wilkins.—A hospital should be established on every large work. With scattered works there should be a central hospital.

A hospital assistant should be attached to every large work with a hospital. The labourers should be inspected every morning by the hospital assistant in view to the elimination of all persons suffering from infectious diseases, and for the relegation of the sick to hospital treatment. The officer will also make his inspections.

The hospitals should be constructed of the same materials as the huts, and the hospital huts of the infectious patients should be destroyed and renewed from time to time. The patients should have room to move about in the hospitals without inconveniencing each other. As such temporary dwellings are from their nature in a measure self-ventilating, a specific area is not needed for each patient.

The patients should be supplied in hospital with cots, and all things necessary for their recovery. Cooking and nursing should be performed by people selected from the alms house, which should be an adjunct to all large works and hospitals.

The hospital assistant should be under the orders of the officer in charge of the works.

Mr. Propert.—On every work containing more than 200 people some sort of arrangement should be made for a hospital. A mere medical apprentice is better than no officer at all, and the expense of a small shed and a supply of ordinary medicines will not be found heavy. Details of this question will be given by the Medical Department. If a civil officer be in charge of the relief work, the hospital assistant should be supervised by him. In all cases relieve Public Works officers as far as possible from all duties not strictly pertaining to their department.

Mr. Norman.—If possible, a hospital should be attached to every relief work. Labourers, on first arriving at a work, should be inspected by the medical officer, to see if any are suffering from infectious diseases. As a rule, all the sick should be treated in hospital. Where there is no hospital, the police may be entrusted with simple remedies for cholera and fever, and those seriously ill must be sent to the nearest hospital or dispensary. The Sanitary Department must arrange for the general supervision of hospitals attached to relief camps. Occasionally, a dharamshala may be used as a hospital, and where no building is available, chappered huts should be put up, about 13 feet × 15 feet. The castes should be separated as much as possible, and nurses and cooks told off from the labour gangs. The Medical Department should be asked to state the accommodation and clothes required for each patient. The officer in charge of a work can exercise little control over a medical officer in charge of a camp hospital, beyond seeing that everything is kept in order, that proper accounts are kept of stores expended, and that persons are not allowed to remain in hospital unnecessarily.

Mr. Spry.—I think a hospital should in every possible case be attached to a relief work, and that can be done if large works are opened instead of numerous petty ones. The sanitary inspection of the labourers should be made daily by the medical staff not only visiting the people on the works, but the relief camp, in order to find out any cases which have not been brought to the hospital. These inspections of the labourers, &c. would be co-existent with sanitary inspection.

Ch. III. Qn. 14.

Bombay.

If a man is not well enough to go to work he should be made to go to hospital, otherwise malingering will be resorted to.

If there is no hospital the medical attendant can only treat patients as best he can, but a hospital there should be. Where works are not likely to be kept open for some time, or where the scene of operations shifts about, as in the case of railway or road works, tents are best suited for hospitals, as being portable. Otherwise they must be made of whatever materials are available. Long thatched sheds with mud walls, and placed so that the prevailing winds can blow through them, have answered well here; separate sheds being devoted to different diseases and to men and women. Common charpoys and "cumblis" should be placed in the sheds for the use of the patients.

The cooking should be done by specially hired persons, the establishment varying with the number of patients. It does not generally answer to employ as cooks the ordinary applicants for relief. As to warders and nurses, they can be selected from out of the most intelligent of the labourers, and paid at the same rates. The arrangements should generally be precisely similar to those in a poorhouse.

If obtainable, assistant surgeons and apothecaries, each in charge of a certain number of works or sections of works, should professionally supervise the hospital assistants.

The officer in charge of the work, whether he be a Public Works Department officer or a civil officer, should certainly have control over the hospital assistant to see that he attends to his duties properly. At present nothing short of the Deputy Surgeon General appears to be able to touch this class of men, and consequently they are often careless and perfunctory in the way they do their work.

Mr. Moore.—I think a hospital should be attached to all large works. The medical officer, the police, and the officer in charge of the work should go round and through the camp daily and inspect any sick people and send them to hospital if necessary. I would not treat any sick out of hospital. If there is is no hospital, the sick should be treated in their own huts with ordinary medicine, a supply of which should be at hand; if there are any bad cases they should be sent to the nearest dispensary. The rest of this question must be answered by the Medical Department except the last, to which I reply that the hospital assistant should be entirely under the orders of the officer in charge of the work, except as regards the professional treatment of cases.

Mr. Percival.—There should always be a hospital attached to a relief work. The hospital assistant should be responsible to his own Department and not be under the authority of the Public Works or Civil officers.

Colonel Anderson.—A hospital in all cases of large works with large bodies collected. All the gangs should be inspected at least weekly. Sickly and weakly might be given light work in the camp, of which there would always be some to be done. Hospital huts should be similar to other huts, with double space allowed to each person. The hospital assistant should be under the professional supervision of the surgeon of the circle, but entirely under the authority of the chief officer of the work.

Mr. Robertson.—A hospital should be attached to all large relief works. The officer in charge of the work should daily, with the medical officer, muster in lines as many of the labourers as possible for sanitary inspection.

The question as to how far the sick should be treated without being sent to hospital is one for the exercise of his discretion by the medical officer. It would be absurd to attempt to pass any rules on such a point. When a labourer is sick, and there is no hospital and his case requires medical aid, he should be sent to the nearest relief house or camp, at all of which there are medical attendants.

The medical attendant should be subordinate, that is, an assistant, for medical duties, to the officer in charge of the work.

Mr. Bosanquet.—It was always an object here to get a medical officer for every work. The appointment of such officers must depend upon the supply, for there can be no doubt of the desirability, or I should say the necessity, of such officers being at every large work. Here we find an additional argument for large works, as the fewer works there are the more easy is it to ensure proper medical supervision on each. I believe the medical arrangements on the Gokak Canal were everything that could be desired. It is not therefore necessary for me to say more on this subject, as those who are so much acquainted with them can give all these details.

Madras.

MADRAS.

Mr. Longley.—Every large work should have a hospital.

Sick coolies can generally be trusted to fall out of the ranks themselves. The establishment on the works are only too ready to turn the feeble out of the working gangs. I do not think it likely that on a large work persons who ought to be in hospital will be retained in the effective gangs, but the medical and engineer officers in charge should make it their duty to look out for such cases and weed them out for medical treatment.

Major Baynes.—On all works of Class I there must be an hospital under the charge of a medical officer of experience; he will require at least two dispensers and a store-keeper through whom he will procure local supplies in the same manner as a poorhouse medical officer. The hospital and the necessary arrangements for its efficiency should be organised before coolies are collected in masses. I have seen the disastrous result of delay in this matter.

All new arrivals should be at once taken to the medical officer; if they are in health, he will write "fit" on their tickets, and then return them with the tickets to the registering clerk to be told off to a gang; if he considers them unfit, he will detain them for such treatment as he may consider proper; those who subsequently become fit for work, he will send to the clerk; those whom he considers to be permanently unfit for employment on Class I he will report to the relief officer for transfer to Class II, or to gratuitous lists; but if the coolies have been properly selected by the relief officers, these latter cases should be few. Every cooly should be inspected once a week after his arrival; this inspection is best done on the spot when the gangs are at work; the medical officer should fix certain days for the inspection of certain gangs, and on such days they should fall in by ranks of men, women, children, as soon as he arrives at the gang next to them. In this way a very large number can be inspected in a short time.

The shape and material of hospital space for each patient being purely professional questions, I do not attempt to offer an opinion upon them, but I would offer some general remarks which bear on them.

Persons who only require simple treatment should be treated as out-patients, and should receive their pay as usual from the paymaster on the medical officer's certificate of their being under treatment;—this indulgence I would limit to three days; those detained as in-patients would not draw pay, and would be struck off the nominal rolls. All cases of chronic

illness should not be detained in hospital, but sent to the relief officer for disposal.

As professional supervision would be rarely obtainable, the medical officer should be a thoroughly experienced man, capable of acting on an emergency; he should be thoroughly conversant with the vernacular of the district. The only professional supervision that can be locally obtained, unless special provision be made, would consist of an occasional visit from the Zillah surgeon, which would be practically useless from its infrequency. I would suggest the appointment to each district of a special medical officer, whose services would be devoted to constant inspection of camps and poor-houses.

Moreover, as he travelled along the roads the laborers of Class II could be drawn up for inspection on notice being given of his visit.

On all special works of Class I, where more than 3,000 coolies are congregated, I consider the presence of a civil officer indispensable for the proper conduct of sanitary arrangements, supply of food, maintenance of hutting, and distribution of pay, and transfer of coolies to other works or to the gratuitous list; at all events such a work should be visited at least once a week by the relief officer. I should, therefore, place the hospital assistant or medical officer in charge of the camp hospital under his immediate orders in all matters not purely professional.

Surgeon McNally.—A hospital should be provided for every considerable relief-work whenever there is no municipal or local fund dispensary within a reasonable distance, say fifteen miles. It is easier, less expensive, and more effective to utilize existing hospitals, increasing their accommodation and establishments to the necessary extent, than to start new institutions, especially at a time when there is certain to be a great strain on the medical department.

The sanitary inspection of laborers might well be entrusted to select and reliable medical subordinates furnished with clear instructions. One medical subordinate for every 10,000 or 15,000 laborers would be sufficient in ordinary cases. He should inspect them all at least once a month and report on their condition, as well as bring to notice any sanitary defects in relief camps, poor-houses, and villages, and any irregularities or deficiencies in relief administration which he might observe within his circuit. He should also report on the state and quality of food and water supplies. A portable stock of made-up medicines, for distribution to the sick during his rounds, should be furnished to him. Civil or Zillah surgeons, or else specially-appointed medical officers, should inspect and control the work of these subordinates and collect their observations, which should be forwarded with periodical reports of their own to the sanitary commissioner or to Government.

When no hospital is attached to a relief-work, the superintendent of the work should be furnished with a stock of useful remedies for common complaints and simple directions for their employment. Standard formulæ for such medicines and brief medical and surgical directions to accompany them should be laid down. Cases of illness or accident which appear to be serious should always be sent to the nearest hospital with the least possible delay.

The shape and material of hospital sheds must necessarily vary with local circumstances. There could be no better roofing material than tarred matting covered with thatch. The eaves should project at the ends and sides to prevent the entrance of rain or sunshine, and the side walls should be formed of movable mats with a ventilation space of about a foot between them and the roof. The roof should be 11 feet high in the middle and 5 feet at the sides, and the floor should be 14 feet wide. A superficies of 56 square feet and a space of about 400 cubic feet per head is taken to be sufficient with free ventilation.

Quarters for the medical subordinate should be close to the hospital. The necessary establishment for a hospital for forty patients would be two ward coolies (male and female), one caste-cook, and one sweeper. The ward coolies should sleep by turns in the dispensary to attend to the wants of patients during the night and call the medical subordinate when necessary. For the majority of patients a date-leaf or other mat, with straw or sand under it, and a cumbly would be sufficient bedding.

A single fixed diet would be more convenient than a scale of diets for a small hospital of this kind, but the medical subordinate in charge should have power to order *extras* as required for individual patients. The diets might be provided by contract with the cook or other person. The inspecting medical officer of the district or division should supervise and report upon the state of such hospitals from time to time.

The Department of Public Works or civil officer in charge of a work should possess direct authority over the medical subordinate. He should, however, be held responsible for any orders he might issue to the latter, and be requested to give all such orders in writing when possible. Cases of misconduct on the part of the medical subordinate should be immediately referred to the Zillah surgeon or other inspecting medical officer, who should have power to reprimand, fine, or suspend him, reporting the matter to the surgeon-general.

MYSORE.

Major Monerieff.—Wherever there is much sickness and a hospital assistant available, establish a hospital, but usually speaking hospital assistants are not very abundant, so it may be convenient to have no hospitals for less than 50 patients, and to bring the seriously ill from outlying works to these hospitals. Hospital accommodation should generally be provided for about 8 to 10 per cent. of the whole workpeople.

If there is no hospital, a native dresser or pundit may be entertained and the officer in charge have a few simple medicines to give the sick.

A hospital should be a good air-tight hut, 15′ wide inside and not more than 88′ long. This allows room for two rows of patients, 25 on each side, and a 3′ passage up the middle. Each patient will then have 21 square feet exclusive passage. For children 15 square feet is ample. The walls may be of mud 4 high. The roof of thatch-ventilation is easily managed along the eves. If the ground is damp and they are easily got, it is best to give the patients beds, the light bamboo and rope *charpoy* of Northern India is about the best bed for them. Elsewhere they should sleep on raised earthern platforms each 6′ × 2½′ and 8″ high, with 1 foot between each. The inside walls of the hut and the side of these platforms should be periodically whitewashed. The floor should be spread with clean sand, unless there is a complaint of fleas, when it is best to have it regularly plastered with mud and cow dung. The bedding and clothing must depend on the climate and the disease. A good warm blanket for each patient should be enough. The usual high caste cooks should be entertained, but convalescents can be employed with good effect in and about the kitchens. Respectable Eurasian women make very good nurses. The best I have ever seen, however, were nuns, of the Church of Rome. If possible a medical officer should inspect each hospital at least once a month. The officer in charge of the work, or the civil officer, should visit it daily and exercise authority as to all questions of sanitation and other matters wanting attention and sound sense rather than medical knowledge.

CH. III. QN. 15.

QUESTION 15.—RELIEF WORKS. ADMISSION, CLASSIFICATION, AND PAYMENT OF APPLICANTS.

What system do you recommend for the admission of applicants for relief on works for securing that no hindrances are placed in the way of their coming, and no bribes taken for admission? How would you provide for classifying them and placing them on gangs? If payment is not made daily, how would you arrange for their receiving advances till the first wage-day comes round? And, if paid daily, what pay should be given to those who come on during the day and work for a broken period?

Punjab.—Civil officers, with aid of committee, to admit applicants, who should be classed by physique and villages. No advances needed.

North-Western Provinces.—Applicants from the same village should be ganged together. New comers should be paid daily for a few days.

Bengal.—The piece-work system is recommended as a security against bribery. The applicants should be ganged at once. Advances are seldom necessary.

Bombay.—12 answers. Applicants should come with orders of admission from authorised officers. They should be inspected, classified, and ganged morning and evening by the officers in charge of works. They should have advances of pay when needful from the cashier.

Madras.—Nineteen gentlemen (Europeans) have replied to this question.

Applicants should be sent to works by the civil officers of districts with nominal rolls, and be received on the works by the officers in charge, and then inspected and classified by the medical and engineer officers. At the height of famine they should also be received on the works direct.

PUNJAB.

PUNJAB.

Muhammad Hayat Khan.—Civil officers, with the aid of a few members of the Relief Committee, will admit people into the relief works. They will be classed according to their physique and capability for work, and provided with tickets of the class to which they will belong. Care should be taken that the people of one village are kept together and in one place. If proper care is taken, there will be no fear of any hindrance being placed in the way of their coming, or any bribe taken for their admission. No advance should be made to workmen. Persons presenting themselves after 10 o'clock in the morning will receive a half day's wage, and before 10 o'clock full wage.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Captain Marshall.—No system can secure these results except close and frequent personal inspection of the works by the officers in charge. I would let the labourers form themselves into gangs by families and villages.

For the first day I would pay in full, but not again after that to the same man. Such payments not represented by their equivalent in work should be paid by a specially appointed officer, and not mixed up with the regular payments; the regular payments being made on work done only.

Mr. Sheldon.—New-comers should be paid daily for two or three days, and their wages should be in proportion to the time they work.

Mr. Sandys.—The officer in charge should be required to give work to all applicants who come there, or are sent by the Collector, or from the poorhouse.

No complaints of taking bribes for admission have been preferred in this district.

As far as possible those coming from the same village and members of the same family are placed in the same gang, the inefficient being separated from the efficient.

Daily payments have been made in this district.

As a rule the labourers come from a distance, and so a full day's wage is given, although the work done may be only for a broken period.

Mr. Lawrence.—Without some system of bodily marking the prevention of fraud is impossible. The best plan is to paint one of the nails of the fingers with a solution of caustic (60 grains to an ounce of water).* This plan is not objectionable to native feelings. All this may be done by a distinctive system of marking on the different finger nails. Besides this nail mark, the labourer should get from the officer who looks after admissions, a ticket coloured according to rate of payment to be received.

* The canal authority at Shikohabad told me that the Agra despatches thus marked were proud of the distinction.

BENGAL.

BENGAL.

Mr. Kirkwood.—Works should be easily accessible. The "distance test" is a most decided hindrance to deserving people wishing to come on to the works. The piece-work system is free of anything like a hindrance. Constant supervision and constant telling the people that they are on no account to give anything to anyone, together with an insistence on the piece-work system, whereby remuneration is only acquired in proportion to the labour expended, will have the desired effect of preventing a giving of bribes. The people are too many and too thick on the works as a rule for anything large in the way of taking of bribes to be done under the piece-work system. The fraud there is generally that of the overseer against the people, and in any such fraud they are not likely to be consenting parties. Their earnings being the direct result of their own labour, they are not likely to offer bribes to enable them to receive what they have earned. Under the daily-wage system it would be different. There bribes may be given for participation in a remuneration not earned and a combination entered into by both labourer and supervisor to defraud Government, each taking their share. Nothing but constant and vigilant supervision will hold in check that tendency. Persons on coming to a work, if eligible applicants for that work, should be taken to the overseer, who should at once distribute them under one or more of the gangsmen,

who will distribute them among the sub-gangs, or form new sub-gangs of them, as the overseer may after due inquiry direct. He should do this so far as possible in accordance with their castes, villages, friends, and relatives; and too many very weakly persons should not be allowed in each gang. They should be distributed amongst the stronger gangs. Persons discharged from poor-houses or hospitals should be sent on to the works in charge of a poor-house chaprasee, who should have a list of their names and abodes, which he should hand over to the overseer, who would place them in suitable sub-gangs. Except in these latter cases, I do not think that, under the piece-work system, any advance of payment is necessary. I have not found it so. It may, however, here and there be so, and in that case at the end of the first day, no matter at what time in the day the person arrives on the works, a wage of the value of one pound of food may be given. This should be an advance to be subsequently deducted. In the case of daily-wage works, by which I mean works where the wage is paid for attendance on the works and not for work done, if the wage is not distributed daily, but every other or every third day, those coming freshly on to the works on a day when the distribution does not take place should be pointed out by the gangsmen to the ticket distributor when he is going over the works; and, in addition to the ticket then given, the ticket distributor should enter the names of all such persons on a slip of paper, and direct them to be present at evening-time at the pay office. He should himself attend at the pay office with his list at evening-time, and should then direct the pay officer to give a certain allowance (sufficient for support up to the regular pay day) to each of such persons, and should certify on the list that that amount has been given. This slip would then be filed by the pay officer as his voucher. The disbursement thus made should be separately shown in the accounts. But in the case of poor-house and hospital recoveries, or of very emaciated persons sent on to works where the piece-work system is in force, a supply of cash (or food) should be given daily for the first week—perhaps 8 annas in all—while strength is being gained. A separate account of these charitable disbursements must be kept by the overseer in charge, and inspecting officers should closely scrutinize that account.

I would have no wearing of tickets or badges by the labourers on the works. The notion of being thus labelled is very distasteful to the people, and tends to keep away many deserving of relief.

BOMBAY.

Mr. Hewlett.—Applicants should, on being inspected by the officer, be either put into a weakly gang or placed either on medium or full work, as their appearance might render advisable.

I would beg to insist on the urgent necessity for daily payments being made to all weakly gangs. The care taken by Mr. Wingate in seeing to this matter was attended with the best results.

General Wilkins.—Applicants for relief on works should be required to produce orders from the civil officers of the district. The passes should state the name of the applicant and that of his village, in order that the distance test may be duly enforced.

The civil officers should make their arrangements that no bribes are enforced from the people when claiming admittance.

Applicants for work should be kept in gangs for the first week and be paid daily if necessary.

A day's work should only be divided into two parts —half a day the smallest broken period. Applicants before noon to receive a day's wages; applicants after noon half a day's wages.

Mr. Propert.—If a civil officer be present, applicants should be admitted to works by him and classified by him in consultation with the medical subordinate. Bribes cannot be prevented by any fixed rules. In the case of new-comers in a state of destitution, advances must be made, and *not fully retrenched, i.e.* a trifle should be given from discretionary allowance as a gift. This in my opinion should be granted by the civil officer in charge of the work, but if it be found impossible for the civil officer to keep a treasure-chest, then he should be in a position to issue orders for payment on the disbursing officer of the Public Works Department. Broken periods must not be treated too strictly in the case of relief works. Pay a man either a whole day's pay, a half day's pay, or nothing at all.

Mr. Norman.—All applicants for relief should be inspected and passed on to the work by the civil officer attached to the work. When no civil officer is available, this duty must be performed by the officer in charge. Those who arrive too late for inspection must be kept at a relief camp in the rear of the works for one night, where they should be provided with a meal of cooked food. Bribes for admission to works will not be given if it is found that the officer in charge is in the habit of moving actively about the works, and that he listens to and investigates all complaints. The gang should be made up, as much as possible, of persons from the same village or district. Families should not be broken up. A muccadum or headman, selected for his intelligence, should be placed over each gang, and a muster karkun attached to every 200 or 300 labourers. Payment should be made weekly, and, when necessary, advances given in the shape of tickets on the grain dealers at the rate of a pound of grain per adult male for each day's work performed. Those who work for only a part of a day and leave of their own accord, should forfeit the day's pay. Those who arrive too late for morning inspection must be fed for one day on cooked food.

Mr. Spry.—If the admission of applicants is left to underlings, abuses will soon crop up. Every morning and evening applicants should be required to assemble at a particular place, say the office of the officers in charge of the work. These officers should then inspect, classify, and tell the applicants off into gangs, and then and there have the rolls made out.

In cases where advances of pay are required, these should only be given by the cashier, when the sanction of the officer in charge has been obtained, and a separate register should be kept of these payments These payments should be made publicly in front o the office.

Mr. Charles.—No system that could be devised wil prevent hindrances being placed in the way of applicants for relief and bribes being taken from them by mustering karkoons. Even if a European were to accompany the new hands and see their names written in the registers, the people themselves, through fear of being reported for laziness, or being bullied by the karkoon in one way or another, would be sure to pay up the usual fees.

A common device of the karkoons is not to enter the names on the new rolls (when the first have been filled up) unless they are "squared." No proof is ever possible of these cases. Ten to one no words pass on the subject between the karkoon and the people concerned, yet both understand perfectly well what is necessary. Any complaint that the people make is attributed by the karkoon to his zeal in making them work harder than they like, and there is always proof available that this explanation is too probable to be altogether disbelieved.

The best system of admission seems the pass system, *i.e.* for a civil officer to be stationed near each large

CH. III. QN. 15.

BOMBAY.

work and to issue daily passes signed by himself to applicants. Any complaints can be inquired into by him on the spot, and though the karkoons may not be punished for want of proof, still immediate inquiry prevents any long-continued hindrance being put in the way of applicants.

I do not think that in any work, however well managed, exactions by karkoons and makadams can be entirely put a stop to; all that can be done is to prevent extremes of exaction and open misconduct.

Mr. Moore.—All applicants for labour should be admitted by a responsible and trustworthy officer, who should give them a pass on to the work, and register their names. The medical officer should be associated with the officer above mentioned, and the pass should state whether the applicant is fit for ordinary or light work, and in cases of civil works the civil officer, and in the case of large works the Public Works Department should divide them into gangs by villages as much as possible. Starving people must have the means of buying food placed at their disposal as early as possible, and if wages are not paid daily, I would on first admission, and till pay day comes round, pay them every other day. A little food is better than none, and the people should make the best shift they can on half allowance till the regular pay day arrives. After that, they should wait till the next pay day. I do not approve of this principle, but it cannot be avoided. Daily or bi-weekly payments should be made. If daily payments are made, I would pay broken periods in proportion to the time worked, but it would be no great hardship to make people who come late wait till next day for admission.

Mr. Percival.—Labourers should be admitted to the work on the order of the district or taluka officers and of any persons authorised by the Collector to send them. When so sent they must on no account be refused, and without that order they must not be received. The Public Works officer will settle what work they are to do. They should be paid the minimum wage for the first day, however short, and daily wage for a fortnight, after which wages may be paid weekly with advantage.

Colonel Anderson.—Due admission must depend on the activity of the officer in charge of the work and his immediate subordinates to check rascality on the part of their inferiors, as also the classification and placing in gangs. The payment of advances would ordinarily lead to difficulty; it seems a matter which must be left to the discretion and arrangement of the head of the work, who might be able to secure small advances through headmen of gangs. Payments for broken periods of a day would be next to impossible.

Mr. Robertson.—The system adopted during the famine was that all applicants for relief were examined, either by the European officer in famine charge of the taluka, or by the relief mamlatdar, or in some cases by special committees serving gratuitously (composed often of some members of a municipality and the sub-judge). Inquiries were made into their circumstances, and if deemed fit objects for State aid, a dakhla or ticket of admission to a certain work was granted.

Everyone knew well enough where he had to go to obtain employment. All village patels were warned where to send applicants. The system worked well, and I am not aware that there was any abuse, or that any bribes were demanded. In fact the position of the Native officers was such as to render the probability of their taking any such bribes most unlikely. If a district officer was of opinion an applicant was not fit to be placed under the Public Works Department, he was sent to a Civil Agency work till fit, and persons on Civil Agency works found to improve and become fit for Public Works Department works were at once transferred.

The officers in charge of the work would gang the people.

Advances were always made to new-comers after the first day or two days' work till pay day came round, such advance being deducted from pay due. Payment should not be daily.

MADRAS.

MADRAS.

Mr. Longley.—The only remedy to prevent hindrances being thrown in the way of the admission of applicants for relief on works and to prevent bribes being taken for admission is (*a*) to provide a sufficiency of European supervision.

I would maintain the present system of coolies being relegated to works by civil officers who should be empowered to examine the nominal rolls of the Department of Public Works in view to ascertain if those so relegated are all employed.

The engineer and medical officers should do the classing, and the ganging may be left to the overseer. Owing to desertions and various causes, there are daily gaps in all the gangs into which able-bodied new-comers could be drafted, the feeble being sent to special gangs worked proportionally to their strength.

New-comers ought to be paid daily, and the cashier ought to be present at the enrolment each morning to note the names of those in each gang who should be paid daily for a certain period. Those who come on the work during the day and work for a broken period ought, if it is their first coming, to get at least the civil agency wage. If habitual deserters, they ought not to be paid for the broken day.

Mr. Price.—I presume that the question refers to large works. I would have a civil officer, European or native, permanently stationed on a work of any magnitude expressly to receive applicants and decide as regards their being taken on. My experience always has been that the head coolies (gangsmen) were the people who levied black-mail for admission. I would have all applicants admitted by the civil officers inspected and classified by the medical and Department of Public Works officers in charge of the works, or an efficient subordinate. I think that it is a mistake that civil officers should classify. The drafting off into gangs after the coolies have been admitted should be entirely in the hands of the officers of the Department of Public Works, care being taken that families and relatives are not, except as a punishment, separated. In Cuddapah we paid new-comers daily for three days, then every second day three times, and after that they went upon the ordinary rule of twice a week. I never would take coolies on the works after midday. Those who came after the period of grace allowed after roll-call to the people on works were taken on on the understanding that they were paid only a half day.

Mr. McWebster.—The Munsif Monegars (headmen) of villages being cognisant of the circumstances of each individual should send applicants for relief to works with a ticket. Counterfoils of the tickets should be kept in the villages for inspection and scrutiny by the taluk relief and division officers, and these officers also should be empowered to send destitute wanderers to works. Camp-superintendents should also be authorised to send inmates of their camps on discharge to relief-works. The officer in charge of the relief-work should be bound to receive such people as may be sent to works under the above arrangement. The officer in charge of the work should also temporarily classify coolies in gangs

immediately on their coming on to works, and the taluk relief or divisional officers should be entrusted with the final classification at their next visit to the works. To carry out this arrangement and to avoid confusion, it would be necessary to keep all new admissions between the taluk relief and division officers' visits in distinct gangs. The officer would then classify the new admissions according to their capacity for labor and other circumstances, such as connection by villages, families, &c. He would then inspect the coolies already classified, and would transfer the weakly in the professional agency gang to the civil agency gang, and the strong in the latter to the former. Coolies once classified should not be transferred to another classification except by the taluk relief or division officer. Coolies coming on work during the day and working for a broken period should be paid the full daily wage.

Mr. Knox.—The present system under which coolies are sent on works by civil officers with nominal rolls works well on the whole. The system prevailing in my division is this: for the purpose of sending on works, the civil officers are divisional officer, tahsildars, deputy tahsildars, and taluk sheristadars. The nominal rolls are printed and have spaces for twenty-five names, as this size was found to be convenient. The coolies themselves took the nominal rolls to the overseers on the work, and the signature of the civil officer was his authority for admitting them. Civil officers did not necessarily give nominal rolls to all who applied to them. The general rule laid down was that, as the Reddi of a village was the only man who knew the circumstances of applicants for relief, all persons wanting to be taken on should, in the first instance, go to their own Reddi. The Reddies were furnished with some nominal rolls, and they would prepare them, in the first instance, and would then send the people to the civil officer who, if satisfied, would sign the roll.

This system provided that the Reddi who knew his people should first as it were recommend them for works, and he could be held responsible for his recommendation. The rule was, however, relaxed to this extent, viz., that when people who were emaciated applied direct to a civil officer, as they often did, they were given a nominal roll, as their appearance was sufficient evidence of their need of relief. Robust applicants were referred to their village Reddi.

I cannot say whether bribery took place or not. My impression is that no set of rules, however perfect, could possibly stop bribery in this country.

I am inclined to think that it would be an improvement on the present system if not only civil officers (as specified above), but also inspecting officers, Revenue inspectors, and village Reddies were empowered to send on works direct; it would sometimes save delay as I have occasionally seen coolies with nominal rolls wandering about looking for the civil officer who happened to be absent. If the authority was abused the sender would be known and could be brought to book.

Once the coolies are admitted on the works I would leave all classification and arrangement into gangs to the Department of Public Works officers.

Mr. Oldham.—(1.) To secure the admission of deserving applicants for relief on works without hindrance and without bribery the power of admission should be rigidly confined to the officer immediately in charge of the work; that is, the overseer or superintendent; and his subordinate gang-writers as rigidly prevented from exercising it. To each of these men should be handed over their gangs when formed and registered, immutable for the time being.

(2.) To provide for admissions there can be one or more depôts on the work at which new-comers will naturally congregate or to which they can be referred. In practice, these were generally at the superintendent's hut or tent; and the superintendent used to classify the new-comers and draft them into the incomplete gangs in the different classes till these gangs were filled up, when they were transferred to another part of the works and new gangs opened for the reception of new-comers.

(3.) The present rules of the Madras Government as contained in their G.O., of 24th September 1877, providing for the admission of applicants on relief-works only through the civil officers leave, I believe, no opportunity for bribery, nor, except in as far as it is imposed by the distances which the applicants have to travel, for hindrance. But in the height of the famine last year, when the relief-works were the great receptacle for persons in an advanced state of distress, those rules could not have been enforced with the staff of civil officers then available, without entailing a much greater mortality than actually did occur.

(4.) If payment is not made daily, the new-comers should be paid daily till pay-day comes round; and if the wage be a subsistence one should receive the full wage, no matter how small the fractions of the day for which they have worked. The difficulty is to provide for their maintenance, when wages are not paid daily, in the interval which follows the first pay-day after their arrival. This interval at this moment is the cause of desertions from the works by emaciated people who straggle back to beg in the bazaars from which they have been already picked up.

MYSORE.

Major Scott Moncrieff.—It is of great importance on a large work of 10,000 coolies or so to have a good civil officer, and it is best that all applicants for work should be referred to him. There are not likely to be many bribes given for admission to a work. Where is the pauper cooly to get the money to bribe? Payments *must* be made daily to begin with. For the first day a subsistence wage may be given, and the same for broken periods or when the work is stopped by rain.

Colonel Johnson.—Put in a good man and make him responsible. A few general rules would probably suffice for his guidance in the matters noted. Hard and fast rules on minutiæ often do more harm than good; good men treat them as waste paper, and indifferent men stick to them when they ought not to do so.

Ch III. Qn. 16.

Question 16.—The Keeping of Registers on Relief Works.

What registers should be kept up of the number and classes of persons on the works, the numbers who are daily admitted, or who leave, the wages paid, the number punished by fine, the quantity and value of the work done?

Punjab.—The usual P. W. D. forms.
North-Western Provinces.—Ditto.
Bombay.—4 answers. The usual P. W. D. forms.
Bengal.—*See* Mr. Kirkwood's reply.
Madras.—Replies from 15 European and 1 Native gentlemen. They cannot usefully be summarised.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Mr. Colvin.—We keep no nominal register on the works except the daily numbering which is made when the people are paid, and which shows daily the number of men, women, and children on the works, and the places from which they came.

Bengal.

BENGAL.

Mr. Magrath.—The register kept by a sub-overseer would be the number of gangs, head of gang by name, persons composing each gang not by name, but so many men, so many women, and so many children. This should be divided into daily columns, each daily column having a subdivision for full work, half work, no work.

This would be checked by the pay department when they come round, and also by the overseer and other upper officials, who could when they came round, by taking here and there a gang and counting it, send for comparison to the pay department their report. The pay department would then deduct from the sub-overseer's pay any excess that might be paid to the gangs. As the new daily admissions would all go into fresh gangs there would be no admissions by the sub-overseer.

Mr. Kirkwood.—On relief works the following registers should be kept up:—

A. (1.) Number of persons on the work at the close of yesterday, showing separately men, women, boys between 12 and 15 years of age, children between seven and 12 years of age, children under seven.
(2.) Number of persons who have to-day left the works, classifying them as above.
(3.) Number of persons who have to-day been admitted to the works, classifying them as above.
(4.) Number of persons on the works at the close of the day, classifying them as above.
(5.) Remarks.

Under this head should be entered the reasons assignable for the leaving, the condition of the admissions, the general condition of the work-people, their discipline, their sanitary arrangements, whether the new-comers came from a distance, the nature of the weather, the price of grain, salt, and vegetables on the works, whether they are easily procurable or not, and whether they are obtained from private dealers or from a Government shop.

The work register should be as follows:—

B. (1.) Description of work.
(2.) Amount of work measured during the day.
(3.) Average measurement per labourer (obtained by dividing column 2 by column 4 of A).
(4.) Remarks.

Under this head should be entered whether the work is satisfactorily done, how many days' work remain before a movement elsewhere will have to be made, how it is proposed to move the gangs, &c.

The cash account should be as follows:—

C. (1.) Amount of money in hand last evening.
(2.) Amount received during the day.
(3.) Total.
(4.) Disbursed to labourers for works.
(5.) Rate of remuneration.
(6.) Other disbursements (such as pay of establishment, hutting repairs, gratuity to labourers), with a specification of the expenditure.
(7.) Total expenditure.
(8.) Balance in hand at the close of the day.
(9.) Remarks.

These registers will have to be written up daily by the overseer. If the pay officer is a separate official from the overseer, then the cash account will be kept by the pay officer. Copies of the entries in each of these registers for the week should be made on every Saturday evening and duly totalled, and then despatched by the overseer to the person under whose orders he is working (Public Works Department or civil officer). Punctual submission should be insisted on. A foot-note should be added to the weekly *Return A.*, showing the daily average number of work-people (classifying them) for the week, and contrasting that average number with the average daily number in the previous week. This foot-note should also mention what proportion of the people are hutted on the works, and whether there is sufficient hutting accommodation on the works for all who desire it; also the condition of the huts. A foot-note to *Return B.* should show the average daily out-turn per person for the week, and the average daily out-turn per person for the previous week should be contrasted therewith. A foot-note to *Return C.* should state the average daily earning per labourer during the week, and contrast it with that of the previous month. If the overseer supplies tools to his labourers, he will have to keep up the following register: (1) number of tools fit for use in hand last evening; (2) number received; (3) number reported missing, broken, or worn out; (4) number fit for use; (5) remarks. Under "remarks" it should be stated if any more tools are required, also the cause of the missing or broken tools, whether anyone is to blame, and whether the value can be recovered from anyone.

This register will likewise be kept up daily, a weekly extract being submitted.[1]

All inspecting officers must closely examine the registers A, B, and C, and see that they are written up to date, initialling them and noting the date of their visit.

I have already elsewhere referred to the measurement-book which every overseer under the piece-work system is to keep up. This book should be denoted by the letter E, and should show in detail (1) date of measurement; (2) the size of each excavation; (3) the mile or half mile in which it lies, and a general definition of its position; (4) the amount due for it; (5) the rate

LIBRARY

of remuneration; (6) the amount paid; (7) date of payment; (8) the name of the person (the selected head man or woman of the sub-gang) to whom paid; (9) remarks. Under this head should be a remark against any excavation calling for it, as to the ease or difficulty of the work, the manner in which it has been done and in which the earth has been thrown, &c.

Every inspecting officer should check this register E by close investigation, by making calculations, by testing the reliability of the remarks, by testing the accuracy of the measurements, and by questioning the labourers as to the amount received. He should also check the entries in B and C by the entries in this register E.

Except under the daily-wage system, I do not think there is any necessity for writing the names and residences of the labourers at length. That is a detail pleasant enough to possess, but its practical value is small, and the labour involved in procuring its accuracy is great and tedious. Every register should show, at its head, the name of the work to which it refers, and its entries must be daily signed by the overseer in charge.

A daily memorandum should be despatched every evening by the overseer to his immediate superior, showing the number of persons (classifying them) on his work that day, and mentioning any notable circumstances.

Ch. III. Qn. 16.

Bengal.

BOMBAY.

Bombay.

General Wilkins.—The usual Public Works form of register, or muster-roll, with morning reports, and figured abstract should be employed.

Mr. Norman.—This question can best be answered by officers of the Public Works Department. The civil officer, in passing applicants on to the works, should keep a register containing the name, age, caste, and residence of all persons he may pass.

Mr. Spry.—The standard forms of muster-rolls contain all the information under this head that is required.

Mr. Robertson.—The Public Works Department can better answer this question. On Civil Agency works the muster-rolls give the necessary information. The quantity and value of work done on Civil Agency works can only be told when an officer can be spared to measure it up.

MADRAS.

Madras

Major Baynes.—List of permanent returns.—General admission registers of laborers and their children.

——— Daily and weekly tabulated statement of numbers on work, in hospital, and in camp kitchen.

——— ——— Hospital general register.

——— ——— Nominal rolls of gangs, of nursing mothers, of children of workers receiving subsistence dole.

Cash account of relief expenditure.

Weekly tabulated statement of wages paid, work done, and amount of fines inflicted.

Account of tools.

Account of receipt and issue of supplies to hospital and kitchen by store-keepers.

Child's kitchen register.

Minor Forms.

Hospital daily state.
Daily state of workers.
Gangsman's daily state.
Gangsman's list of vacancies.
Child's kitchen daily state.
Indents for tools.
Return receipt of tools into store.
Out-patient hospital tickets.
Sick tickets for Class II. laborers.
Children's admission tickets.
Labor admission tickets.

Question 17.—Organisation of Relief Works.

Ch III. Qn. 17.

Describe the organization of a well-managed relief work, the number of gangsmen and of labourers in each gang, of overseers over the gangsmen, of registering clerks and paying clerks or cashiers, and how the upper supervising staff is constituted. State also in what form, and at what periods, progress and other reports are sent up to higher authorities.

Bombay.—3 answers. Not summarised.

North-Western Provinces.—Various statements given.

Bengal.—Ditto.

Punjab.—Ditto.

Madras.—Replies from 12 European and 1 Native gentlemen. Not summarised.

NORTH-WESTERN PROVINCES.

North Western Provinces.

Capt. Home.—The following is, as far as I can remember, the organization on the Bulandshahr Right Branch in 1861. The daily number of labourers rose as high as 10,000 per diem, and averaged about 8,000:—

Engineer.

1 Assistant Engineer in charge.

Office and Petty.

1 Naib Munshi	@ Rs.	15
1 Treasurer	„	20
1 Chaprassi	„	5
1 Daffadar	„	6
4 Barkandazes	„	4

Works.

1 Head Muharrir - - -	@ Rs.	25
1 Head Mistri - - -	„	20
12 Muharrirs in charge of parties -	„	15
12 Mistris - - - -	„	10
1 Muharrir in charge of tools -	„	15

The parties were divided into gangs of about 40 labourers each, under a mate on two annas a day, and each gang had a bhisti attached to it on the same pay. One or more carpenters were provided for each party for replacing handles of tools.

Reports were submitted weekly somewhat in the form given in para. 16, and at the end of the month the total number of labourers, the expenditure, and the work done were submitted with a concise report of the month's operations.

Mr. Cordner.—(*a.*) The general organization of a relief work depends so much on what the work in question actually is, that it is difficult to lay down the proportion of establishment to number of labourers in a gang. In the work described in answer to Chapter III., para. 2, the number of men in a gang varied from 20 to 100, and had one gangsmen. A sub-overseer had charge of from 5 to 10 miles of a road and from 500 to 1,500 labourers, according as the work was light or heavy embankment.

An overseer had generally charge of about 40 miles of road, or from 4,000 to 6,000 labourers. Cashiers' offices were generally placed about 10 miles apart.

An Assistant Engineer had charge of from 80 to 100 miles of road, or had from two to three overseers under him.

Mr. Colvin.—Daily reports are sent to me. Our organization was as follows:—

I.—*Receiving Labourers.*—These are received by overseer or sub-overseer in charge of work, at some fixed point, usually a tope of trees, where spare tools are stored for issue.

II.—*Putting them to work.*—New arrivals for the day are put to work as soon as those who have already been on the work for some time have fairly commenced for the day.

III.—*Distribution by Gangs.*—Gangs are made up in thirties, *i.e.*, 10 diggers (stout men) and 20 carriers, being a proportion of weaker men, women, and children, as the numbers run. People from the same or neighbouring villages are encouraged to form their own gangs, and every endeavour is made to see that the average strength of each gang, as a gang, is uniform. New arrivals are formed into fresh gangs, and any surplus divided amongst other gangs where a member may be missing.

IV.—*Provision for Weakly.*—The weakly people who are however able to work, are divided amongst the stronger in as fair a proportion as possible, and the task regulated to suit. Those who are unfitted for work are sent to the inefficient gang.

V.—*Musters.*—Nominal rolls of *all* are not kept, nor attempted to be kept, but one ganger is told off to every four gangs (120 people) and one muharrir to every 20 gangs (or 600 people). Each gang selects its own "mate" or "tindal" who also works, and the muharrir takes down his name daily, with the number in his gang, men, women, and children.

VI.—*Measurement of Work done.*—The work done by each gang is measured up every evening after 4 o'clock, and the value of the total work done, at the fixed rate, is paid to the "tindal" of each gang, who distributes it in proportion to the members of his gang for the amount of work done during the day by each. Should the individual members complain about not getting their fair share, the pice is distributed to each individually by the overseer or other officer.

VII.—*Rates of Pay.*—The rates in this district vary with the soil from 2 to 4 annas per hundred cubic feet (Rs. 1-4 to Rs. 2-8 per thousand) for rough undressed earthwork, paid to labourers and all tools found them; Rs. 0-2-6 is the usual rate. The average task per head, all over the district done, is about 36 cubic feet.

VIII.—*How Paid.*—The people are invariably paid in hard cash, Government pice being used for the purpose of 4 pice to one anna.

IX.—*Nature of Tickets.*—Tickets are not used on any work except that road kept for the inefficient gang and people sent from head-quarters poorhouse, from which people are sent as they improve in condition and are considered able for work. Tickets are only issued to them as a check to prevent all comers seeking work on this road, where the average task is slightly easier.

X.—*Provision for Labourers at Night.*—No arrangements of this kind have been found necessary for the ordinary gangs, the people all scattering to the neighbouring villages, which are numerous near all works in operation and to which they generally belong. During the extreme cold of December and January, chhappars were sent out from poor-house for poorhouse people, but very few remained in them; they preferred going to the nearest villages. Hutting, however, for inefficient gang has been regularly provided.

XI.—*Provision for Sick on the Works.*—There is a hospital with the inefficient gang, and a compounder with medicines with the able-bodied gang.

XII. — *Payments for Sunday.* — As on other days.

XIII.—*Aid received from Civil Departments.*—Tahsildars have been provided with large imprests, and have been employed in collecting tools (phaoras and baskets) which they store at tahsils, and issue to works on direct indents from overseers. Collector has also appointed civil officers to patrol works regularly to ensure the people being properly paid; a civil officer has also been appointed to look after hospital and other arrangements with the inefficient gang, and the classification of people (or census) is always done by civil officers.

XIV. — *Conservancy.* — Moveable latrines might have been adopted; but a special establishment would have been needed to force people to them, and as the work area is always shifting, I saw no need for this.

XV. — *General.* — The system adopted in this district is to pay through contractors or cashiers, who are bound to give the coolies the rate fixed by Collector, and are paid in proportion. Daily returns are received showing the numbers, amount expended, and quantity of work done, and on these cheques are issued daily to contractors, who arrange for the drawing of money from treasuries and collection of pice, and whose men accompany the overseers during measurements, and pay the value of amount done. The excavations are arranged in such a way, each tank or "khassa" being kept quite distinct, that no fraudulent measurements can occur, as the final measurement will show it at once, and the contractor will only receive final payment for the quantity of work done, on completion of "dressing," &c. The patrolling of the works daily by a civil officer checks any attempt to cheat coolies or underpay them.

XVI.—*Scale of Establishment employed on the Work.*

		Men.	
1 Overseer	per	4,000	Employed by Public Works Department.
1 Sub-overseer	„	1,000	
2 Munshis	„	1,000	
10 Chaprasis	„	1,000	

2 Munshis	,, 1,000	Employed by contractor, who, however, was rather a paymaster than a contractor. He found the money, made the measurements, and paid all wages, under check and supervision of Department Public Works officers and officials, receiving a per-centage on his payments.
3 Chaprasis	,, 1,000	

Mr. Cornwall.—The relief work in this district, which was confined entirely to the re-construction of the Mogal road, was managed by the District Engineer in the following way:—

When distress appeared, work was commenced at the Etàwah boundary, by lining out and dividing the road to be constructed into pieces of 200 feet in length, which were given to contractors, taken at first from the skilled labourers on the spot, and afterwards from such men as appeared most intelligent and fit for supervising such work.

As the people arrived, they of their own accord joined one or other of these contractors, and in the evening the contractor or ganger received a portion of the wages due, calculated on the probable quantity of the work done, and the number of labourers employed in his gang on that date.

The contractor distributed the greater part of this money amongst them, and at the end of the week his work was measured up and payment made in full.

This way was simple enough and gave no trouble till the ticket system was introduced, and a scale of pay to each individual insisted on by Government, when the following arrangements had to be adopted:—

Before commencing work in the morning, the men, women, and children were collected separately and counted; after this they were divided into gangs of from one to two hundred, and baskets and phaurras were supplied to those who came without them; these gangs were then marched on to the work, which was already prepared for and marked out for them.

The labourers were allowed two hours' rest from 12 to 2, and were again counted before they went to their work, but this time each person got a ticket which represented the amount he was to receive when his work was finished.

The workmen were also counted from time to time in the morning and in the evening at irregular hours by the District Engineer and his European subordinates.

Work was struck at 6 P.M., and payment made under the supervision of the District Engineer.

Progress reports were furnished once a week showing the number of men, women, and children on the works, with the amount expended during that period.

The answer to this question was written by the District Engineer.

BENGAL.

Mr. Worsley. — On a well-managed relief work 5,000 or 6,000 labourers are employed under a supervising staff of one assistant engineer or civil officer, and an overseer. The labourers being divided into gangs of 20, and represented by sirdars, are paid in the course of 15 or 20 minutes every evening by the assistant engineer, who, on the authority of the measurements made by the overseer, pays the amount due to each gang into the hands of the gang sirdars. The assistant engineer resides on the spot, and with the aid of one overseer and the gang sirdars can keep thoroughly in hand even so many labourers as 10,000. In March 1874 I accompanied Sir George Campbell on a visit to a relief work in Durbhunga, which was managed in the above manner under the control of the Durbhunga Raj Engineer Mr. A. W. Stevens. We saw some 6,000 labourers paid in a quarter of an hour, and the Lieutenant-Governor expressed himself greatly satisfied with the system.

Mr. Magrath.—So far as I remember, the arrangement we arrived at was each gang so far as possible to consist of 20 persons, eight men, six women and boys, and six children, but this had to be modified occasionally. Amongst the men were boys over 16 who would do a full day's work; whereas amongst some of the labouring classes one man could cut as much as two women and one or two children could carry.

We allowed less men in proportion; each of these gangs had its ganger who received 2 annas instead of $1\frac{1}{2}$; 10 gangs went to each sub-overseer, and 10 sub-overseers to each overseer. The upper subordinate staff was so weak that we had to give the supervisors a very large number of overseers. We had not men to form a paymaster's staff, but paid through the overseer and sub-overseers. The sub-overseers sent a report to the overseer, who forwarded the report, with his remarks, to the supervisor, who had already indented for and received the probable amount payable. I would, however, have a supervisor over every five overseers, and conterminous with the supervisor's limits I would have a paymaster, with a pay-clerk for every sub-overseer. The pay-clerks should be carefully sent to different sub-overseers daily, and should at intervals be changed from one paymaster to another to prevent collusion. The paymaster and his clerks should every morning work up their returns of the day before and send them to the head-quarters accounts establishment, where they would be checked with the lists of the sub-overseers, copies of which should be daily taken by a supervisor's clerk appointed for the purpose, and the reports of the overseers and supervisors and superior authorities of the numbers which they found in the gangs. (In practice, I found that the gangs were nearly always full in number.)

The superior account department would, of course, prepare all the returns required for Government, and the reports would be sent by the civil authorities, but it must distinctly be understood that these must be of a very simple character. But that the subdivisional officers took upon themselves the onus of not keeping the cumbrous gola and progress returns desired by Sir George Campbell, people would have been left to die for want of food or pay whilst the goladar's relief officers were making out the returns.

Mr. Metcalfe. — Relief work having been determined upon, the work is marked out by a Public Works overseer or some other competent officer. The line of the excavation is also demarcated and marked into lengths or plots of a hundred feet long. The sections of road are then placed in charge of what in Behar were called monsarims. It was the business of these officers, on distressed persons arriving at the works, to allot to them lengths on either side of the work. The officer kept a register in which were entered the date, the number of arrivals of men, women, and children; and if they were utterly destitute, he was authorised to make them a small advance of grain. The labourers being supplied with baskets and spades are then set to work, receiving for their labour at the rate of four annas for every hundred cubic feet. The monsarims in the afternoon of each day calculate the work which has been done for each 100 cubic feet completed, and give the labourers a ticket for payment in grain on the nearest granary; or if there be no such granary, it is the duty of a monsarim to give each labourer a ticket on the officer whose duty it is to pay. It is the duty of the paying officer to visit certain central spots along the line of work daily, and

2 Munshis	,, 1,000	Employed by contractor, who, however, was rather a paymaster than a contractor. He found the money, made the measurements, and paid all wages, under check and supervision of Department Public Works officers and officials, receiving a per-centage on his payments.
3 Chaprasis	,, 1,000	

Mr. Cornwall.—The relief work in this district, which was confined entirely to the re-construction of the Mogal road, was managed by the District Engineer in the following way:—

When distress appeared, work was commenced at the Etàwah boundary, by lining out and dividing the road to be constructed into pieces of 200 feet in length, which were given to contractors, taken at first from the skilled labourers on the spot, and afterwards from such men as appeared most intelligent and fit for supervising such work.

As the people arrived, they of their own accord joined one or other of these contractors, and in the evening the contractor or ganger received a portion of the wages due, calculated on the probable quantity of the work done, and the number of labourers employed in his gang on that date.

The contractor distributed the greater part of this money amongst them, and at the end of the week his work was measured up and payment made in full.

This way was simple enough and gave no trouble till the ticket system was introduced, and a scale of pay to each individual insisted on by Government, when the following arrangements had to be adopted:—

Before commencing work in the morning, the men, women, and children were collected separately and counted; after this they were divided into gangs of from one to two hundred, and baskets and phaurras were supplied to those who came without them; these gangs were then marched on to the work, which was already prepared for and marked out for them.

The labourers were allowed two hours' rest from 12 to 2, and were again counted before they went to their work, but this time each person got a ticket which represented the amount he was to receive when his work was finished.

The workmen were also counted from time to time in the morning and in the evening at irregular hours by the District Engineer and his European subordinates.

Work was struck at 6 P.M., and payment made under the supervision of the District Engineer.

Progress reports were furnished once a week showing the number of men, women, and children on the works, with the amount expended during that period.

The answer to this question was written by the District Engineer.

BENGAL.

Mr. Worsley. — On a well-managed relief work 5,000 or 6,000 labourers are employed under a supervising staff of one assistant engineer or civil officer, and an overseer. The labourers being divided into gangs of 20, and represented by sirdars, are paid in the course of 15 or 20 minutes every evening by the assistant engineer, who, on the authority of the measurements made by the overseer, pays the amount due to each gang into the hands of the gang sirdars. The assistant engineer resides on the spot, and with the aid of one overseer and the gang sirdars can keep thoroughly in hand even so many labourers as 10,000. In March 1874 I accompanied Sir George Campbell on a visit to a relief work in Durbhunga, which was managed in the above manner under the control of the Durbhunga Raj Engineer Mr. A. W. Stevens. We saw some 6,000 labourers paid in a quarter of an hour, and the Lieutenant-Governor expressed himself greatly satisfied with the system.

Mr. Magrath.—So far as I remember, the arrangement we arrived at was each gang so far as possible to consist of 20 persons, eight men, six women and boys, and six children, but this had to be modified occasionally. Amongst the men were boys over 16 who would do a full day's work; whereas amongst some of the labouring classes one man could cut as much as two women and one or two children could carry.

We allowed less men in proportion; each of these gangs had its ganger who received 2 annas instead of $1\frac{1}{2}$; 10 gangs went to each sub-overseer, and 10 sub-overseers to each overseer. The upper subordinate staff was so weak that we had to give the supervisors a very large number of overseers. We had not men to form a paymaster's staff, but paid through the overseer and sub-overseers. The sub-overseers sent a report to the overseer, who forwarded the report, with his remarks, to the supervisor, who had already indented for and received the probable amount payable. I would, however, have a supervisor over every five overseers, and conterminous with the supervisor's limits I would have a paymaster, with a pay-clerk for every sub-overseer. The pay-clerks should be carefully sent to different sub-overseers daily, and should at intervals be changed from one paymaster to another to prevent collusion. The paymaster and his clerks should every morning work up their returns of the day before and send them to the head-quarters accounts establishment, where they would be checked with the lists of the sub-overseers, copies of which should be daily taken by a supervisor's clerk appointed for the purpose, and the reports of the overseers and supervisors and superior authorities of the numbers which they found in the gangs. (In practice, I found that the gangs were nearly always full in number.)

The superior account department would, of course, prepare all the returns required for Government, and the reports would be sent by the civil authorities, but it must distinctly be understood that these must be of a very simple character. But that the subdivisional officers took upon themselves the onus of not keeping the cumbrous gola and progress returns desired by Sir George Campbell, people would have been left to die for want of food or pay whilst the goladar's relief officers were making out the returns.

Mr. Metcalfe. — Relief work having been determined upon, the work is marked out by a Public Works overseer or some other competent officer. The line of the excavation is also demarcated and marked into lengths or plots of a hundred feet long. The sections of road are then placed in charge of what in Behar were called monsarims. It was the business of these officers, on distressed persons arriving at the works, to allot to them lengths on either side of the work. The officer kept a register in which were entered the date, the number of arrivals of men, women, and children; and if they were utterly destitute, he was authorised to make them a small advance of grain. The labourers being supplied with baskets and spades are then set to work, receiving for their labour at the rate of four annas for every hundred cubic feet. The monsarims in the afternoon of each day calculate the work which has been done for each 100 cubic feet completed, and give the labourers a ticket for payment in grain on the nearest granary; or if there be no such granary, it is the duty of a monsarim to give each labourer a ticket on the officer whose duty it is to pay. It is the duty of the paying officer to visit certain central spots along the line of work daily, and

to pay the labourers according to the amounts entered in the tickets. A superior officer should weekly supervise the measurement of the work done, and compare the amount entered in the registers with the quantity of earth excavated. The employment of gangsmen has been found open to great objection. It is better to allow small parties of labourers each to appoint their own headman to watch measurements and receive payments on their behalf. No progress reports need be submitted by the monsarim: the weekly inspection by an engineer or his assistant, or by the circle officer, being a better method of ascertaining the progress of works than reports by subordinate officers. It is convenient for the circle officers to submit progress reports, as was done in the Behar famine, fortnightly.

Mr. Kirkwood.—I have already to a great extent, in answer to other questions dealing with the "piece-work" and "daily-wage" systems, anticipated this question.

Under either system there should not be more than 2,000 people in a gang. Where there are more, any difficulty in discipline becomes proportionately very much greater. So also will the task of controlling sanitation and of supplying provisions.

For these numbers, under either system, one overseer should suffice. On piece-work, one paid gangsman to every 400 labourers will be sufficient. On daily wage, the number of gangsmen will probably have to be four times as great. To the overseers there should be attached two chaprasies, who would, among other things, throw the pole with which the measurements of the work are made; they would also bring from time to time the necessary cash from head-quarters. To the overseer should also be attached a registering clerk, who should, under the overseer's supervision, keep up the registers and otherwise assist him.

On light-labour piece-work the following remuneration for the *employés* will be found suitable:—

Overseer.—Rs. 20 per mensem, *plus* a commission of one anna for every 1,000 cubic feet of earth-work done, half anna for every 1,000 superficial feet of turfing done, quarter anna for every 1,000 superficial feet of dressing done; with a full-sized gang of 2,000 persons this commission comes to about Rs. 70 or 80 per mensem. This commission is only to be paid on measurements as found by the departmental check measurement.

Registering Clerk.—Rs. 15 per mensem.

Gangsman.—Rs. 7 per mensem.

Chaprasi.—Rs. 5 per mensem.

The overseer should give security in Rs. 500 on his appointment, which security should be liable to confiscation on the occurrence of defalcations or of misconduct.

The establishment should be paid regularly on the 1st of every month, and the commission should in the first place be paid on the work as returned by the overseer. Any deduction from commission which the Public Works Department check measurement may subsequently show to be necessary should be made from the commission of the next month. Punctual payments of wage and commission engender confidence and a belief that a substantial livelihood is obtainable without fraud; uncertainty in the payment of wage often drives *employés* to make fraudulent earnings the certainty, and wages the accidental accessory.

The labourers under each gangsman should be allowed to arrange themselves into sub-gangs of from five to ten each, and every aid should be given them in thus drawing together people of the same family, caste, or village. Care should be taken that the labourers are not incommoded by being crowded too close together on the works.

Under the daily-wage system, as I have already noticed in answering questions 7 and 8, there will have to be a very reliable officer (who should generally be a native military officer), with strict ideas of probity and discipline, for the purpose of distributing tickets to the workers, which tickets the work-people will at evening-time cash at the pay office on the works in the presence of the ticket distributor, overseer, and gangsmen. The manner in which the works should be supervised and payment should be made under the daily-wage system has been set forth in answers to questions 7 and 8. The duties of the overseer and of the gangsmen, and the manner in which payment should be made to the labourers on piece-work, has been dealt with in answers to questions 10 and 11.

Baskets should be provided by the workers themselves. This is the only way to make them careful. If baskets are given them, they will be broken up for firewood, lost, or thrown away within a few days. They, moreover, present the overseer with an opening for making false and uncheckable charges. If the people find them for themselves, the cost is very trifling, probably half an anna per mensem for each person.

BOMBAY.

Colonel Jones.—The gangs should average about 50 persons, with a muccadum or head cooly on relief wages, who should be held responsible for the tools and general conduct of his party. One mustering karkoon and three trained muccadums for eight gangs or 400 persons; one maistry to 32 gangs or 1,600 persons. As many cashiers should be provided as may be practically found necessary to secure prompt payment. The upper supervising staff should consist of the upper and lower subordinates of the Public Works Department. The sub-overseers to work out the task-work, &c., under the general direction of the upper subordinates.

The forms sent up to higher authorities are annexed:—

1. Weekly Progress Report.
2. Return of Expenditure upon children under seven years of age.
3. Return of Expenditure from the Discretionary Grant of Collectors.
4. Return of Deaths on Famine Works.

General Wilkins.—Every large work should be in charge of a European officer, with an establishment of subordinates of the upper and lower Public Works permanent Establishments, and with temporary establishments of

Cashiers.	Maistries.
Karkoons.	Muccadums.

If relief works are scattered over a Collectorate in the shape of roads and tank works, every taluka of the district should be placed in the charge of a European officer for the management of relief works in his taluk. Every taluk should also have its civil officer to act in conjunction with the officer of relief works.

The number of relief labourers an officer is capable of supervising will depend whether the people are concentrated or scattered. As a limit no officer should have more than 10,000 persons in his charge, and it is advisable that the charges should not exceed 8,000 or 9,000 persons.

Thus a well-organized centre of relief should comprise the following establishments:—

Permanent Establishment.	Proportion to People.
1 Assistant Engineer -	- 1 to say 9,000
3 Upper Subordinates -	- 1 to 3,000
3 Lower Subordinates -	- 1 to 3,000

Temporary Establishment.

3 Assistant Engineer's Clerks	1	to	3,000
3 Cashiers	1	to	3,000
15 Maistries	1	to	600
20 to 30 Karkoons	1	to	300 / 450
225 Muccadums	1	to	40

Weekly reports should be sent in by officers in charge of works, giving the following information:—

1. Numbers on works.
2. " " previous week.
3. Increase or diminution.
4. " " of men.
   " " women.
   " " boys.
   " " girls.
5. Expenditure during the week.
6. Work performed.

The duty of taking on people, seeing that they are not defrauded by the karkoons and muccadums, and that the work is speedily performed, is so continuous and absorbing that the Public Works officer should be aided in this matter by an officer who should be a European. Many officers of the army were engaged on famine works in the Madras Presidency with the utmost advantage to the people.

The European element was found better adapted than the native element in supervising the people. Full establishments are economical.

Ch III Qn. 17.

Bombay.

Mr. Spry.—Officers of the Public Works Department are best able to describe the organization of a well-managed relief work under them. I can only speak of Civil Agency works, where I have always found a difficulty from insufficiency of properly qualified establishment. As far as I can I will give what I consider sufficient—

1 muccadum over every gang of 50 labourers.
1 mustering and registering karkun over every 5 gangs.
1 maistry and registering karkun over every 5 gangs.
1 cashier for every 10 gangs.
1 overseer for avery 20 gangs.

Over the overseers comes the officer in charge of the taluka or other officers specially appointed, but as I have said before, civil establishments are not properly qualified to superintend relief works, and fail more especially in strength in the upper grades. The morning reports should be submitted to superior officers just on the same principle as is carried on in the Public Works Department.

CENTRAL PROVINCES.

Central Provinces.

Mr. Nicholls.—Such a measure for the purpose of preventing those who are not in absolute want of relief would be perfectly unnecessary in these provinces, where, in addition to the standing rules of hard work and little pay, the apathy and detestation of the people in Chhattisgarh and on the rice lands generally, to such kinds of work as we could give them, and the independent spirit or the sense of shame in the people elsewhere, may be safely calculated on to keep the people other than those in absolute want of relief from asking for work.

Removals of bodies of men on works should only among us be resorted to to prevent sickness, to remove them from a locality of deep distress to one in which food was not so dear, water more abundant, regular supplies more easily assured, better supervision maintained, or the like.

MADRAS.

Madras.

Major Baynes.—That work is best organised which most largely secures facility of admission to work, regularity of measurements, and payments; check on peculation; sanitation of the camp; regular submission of returns.

The first four subjects have been fully discussed in preceding paragraphs; the attainment of the fifth is dependant upon the efficiency of the office clerks and the regular submission of returns from the field subordinates. I have not had much experience in carrying on a large relief-work to which a camp was attached, but I may remark that from what I have had, the same principle which regulates the economy of a regiment appears to me applicable to any mass of men. The first object is to get the laborers into conveniently-sized parties for supervision and control; I should, therefore, first divide them into divisions; the strength of a division would be that number of laborers which an overseer could thoroughly supervise, and whose outturn he could measure up in one day once a week; next, this division would be subdivided into such parties as one man could pay daily; this number, as stated in paragraph VII. (*g*), should not exceed 800; then into such companies or gangs which one man can control; this number of a gang has been fixed at 100, paragraph VII. (*b*). I have not any experience of what an overseer can measure in a day further that what I can do myself; but I think sixteen such gangs would be enough to occupy one man. For sake of argument, let these figures be assumed correct, then the strength of a division would be 1,600 laborers, and the staff would be—

One overseer,
Two paymasters,
Sixteen gangsmen,
and for maintenance of discipline in camp and to keep the latrines clean there would also be required—
Sixteen warders,
" scavengers,

as shown in paragraph XII. Each such division should have its own camp formed as described in paragraph XII. (*a*); therefore gangs should be composed entirely of caste persons and pariahs and should be named after its overseer; the gangs should be numbered consecutively: thus, if Ragavayengar was the name of the division overseer, then the gangs would be known as Nos. 1, 2, 3, &c., Ragavayengar's division; the division should be kept intact as an unit at work, so that an applicant for work should have no difficulty in finding the gang to which he is posted—see paragraph XV.

The overseer, according to the suggestion made in paragraph VI. Chapter II, would be under the immediate orders of the Public Works Department officers, but his duty would, I presume, be to exercise constant supervision over his gangs as to the proper conduct of the work and to take measurements of outturn, so as to enable the nominal rolls or pay sheets to be adjusted weekly; he will also have to furnish the register clerk every evening with a statement of vacancies in each of his gangs, so that new arrivals may be posted to gangs expeditiously and advantageously.

The paymaster should, according to my scheme, be unconnected with the Public Works Department and under the orders of the relief officer; he will pay every individual of his sub-division daily after making a final payment in adjustment of a nominal roll (that is after the weekly measurement has been taken); he will retain it and send it into the camp office for

Ch. III. Qn. 17.

Madras.

audit—see paragraph VII. After the cashier's account is audited, these rolls should be sent to the engineer officer for check on measurements and record.

The gangsman.—He must be able to read and write the vernacular of the taluk; he should muster his gang morning and evening and remain with it whilst at work; should a member fall sick on the work, he will send such person with a ticket to the hospital; this ticket should be returned by the medical officer endorsed admitted as out-patient or in-patient, or refused treatment. On receipt of the ticket the gangsman will make corresponding entries in his nominal roll, and he will submit every evening to his overseer a "strength statement," showing number of casualties or vacancies, which should be given in by the overseer to the register clerk; he should muster the tools of his gang at the same time he musters the members of it, and report at once the fact of any tool being missing or broken. Mahomedans are the best class for this employment, but they are seldom educated, and therefore cannot be procured in sufficient numbers. Gangsmen would be under the immediate orders of the engineer. Over a pariah gang a Mahomedan should always be placed. The duties of a gangman on Class II. work are slightly modified.

Mr. Oldham.—1. Under the daily task-work system my practice was, as regards registers, vouchers, payments and paying agencies and accounts different from that in force in the rest of the Bellary District. I still adhere to it as the best.

For every fifty laborers there was a head cooly or gangsman, for every five such gangs a gang-writer. For every six gang-writers there should be a paymaster, subordinate to the Treasury Department as apart from the subordinate work department, and for every twelve gang-writers there should be an overseer or superintendent. For the latter post intelligent British soldiers or non-commissioned officers or commissioned or good non-commissioned native officers of the Bengal Army—particularly of the cavalry—do excellently well. If this superintendent has his full 3,000 laborers there ought to be a distinct agency for assigning and measuring the work.

Five gangs are formed and registered. The register is signed by the superintendent and made over with the gangs to the gang-writer. This nominal roll is in a permanent form, and, as it does not contain columns for daily attendance, can last for months. For if a laborer is absent at roll-call or pay time his name must be struck out and the date of doing so only need be entered. The absentee can only gain re-admission through the superintendent. Fines are similarly noted, and the dates of new admissions.

The gang-writer must furnish the paymaster every evening with an abstract slip of the numbers of men, women, and children in his gang. Copies of these abstracts are kept in his permanent nominal roll-book in successive columns at the end of it.

The superintendent, as he forms each gang, registers the gang-writer's name with the numbers of laborers in each class assigned to him. As he checks the gang daily at pay time or in the evening, he has only to note the number by which it is short, and frames his return of his numbers accordingly. This return must be sent weekly to the superior officer. If the latter has time or an establishment sufficient to check these returns it is best to send them daily.

To the paymaster is assigned a permanent advance, which he clears and gets renewed by the submission of bills, sent weekly at least, showing the names of the gang-writers whose gangs he has paid, the number in each class in each gang each day, and the total sum paid each day to each gang. With the superintendent's muster return sent daily there is no object in these bills being submitted oftener than once a week, on a fixed day. This bill is accepted as a complete voucher, and is the lowest voucher to which the officer who is responsible for the expenditure need go. When a superior officer inspects the works he sometimes will muster all the laborers on it, and will always check individual gangs, and compare the nominal rolls and the abstracts entered in them with the superintendent's and paymaster's registers and bill-books.

All reports to higher authority, from the Government down to an officer in separate charge, should be sent weekly at least.

Mysore.

MYSORE.

Major Scott Moncrieff.—Take a gang of 50 as the unit, composed of men, women, and children, as far as possible in the proper proportion for the work to be done, the diggers being the fewer the longer the lead, but also arranged to employ all-comers.

Over every gang have a gangsman.

To every four gangs have a mustering writer.

To every 24 gangs have a sub-overseer.

To every 48 gangs have an overseer or other upper subordinate.

To every 96 gangs have sub-divisional officer. The strength of a sub-division will consist then of—

1 sub-divisional officer (who should be an assistant engineer.)
2 upper subordinates.
4 lower do. (sub-overseers).
24 mustering writers.
96 gangsmen.
4,800 coolies.

There should be two cashiers to each sub-division.

Hospital accommodation for 10 per cent., say 500 coolies and 5 hospital subordinates, should be provided. Also five nurses. Progress and other reports should be sent up according to the ordinary Department Public Works rules, but weekly reports of the numbers employed; the numbers in hospital should be submitted in addition.

Ch III. Qn. 18.

Question 18.—Arrangements for the Discharge of Labourers.

What arrangements would you propose for discharging labourers from relief works when the famine is declining, or over, or when the work is closed?

Punjab.—The people will leave of themselves. No advances have been given.

North-Western Provinces.—The people will go off of themselves. If they do not, the work may be closed or tests made severer. A residue still requiring relief must be taken into poor-houses. The people often have savings to take them home. If not, money or food may be given.

Bengal.—The people will leave of themselves. If not, notice of the closing of the work should be given. Advances to be repaid should be made to the ryots or their zemindars.

Bombay.—10 answers. If famine continues the labourers will be transferred from the work closed to another. At the end of a famine they will mostly go off of themselves. If they delay, wages may be reduced to subsistence allowance. Poor-houses should be kept open for those still weak. It is not generally found necessary to give the people money when they go. They sometimes have food.

Madras.—21 European and 3 Native gentlemen have replied.

There is a general consensus of opinion that when an improvement of the season offers opportunities of subsistence elsewhere the people leave the works of their own accord. If discharged from a work, and not transferred to another in consequence of the extreme pressure having passed off, they should be furnished with sufficient means to enable them to return to their own homes.

PUNJAB.

Mr. Nicholl.—The departure of the people *suo motu* is generally the first sign of the decline of a famine that I have observed. There is seldom any necessity for discharging them. Some of course will linger till the work is closed, which happens when it is known that work may be had in the fields or elsewhere.

No money has ever been given to enable people to reach their homes or to start again in life, nor has any been asked for.

NORTH-WESTERN PROVINCES.

Mr. Lawrence.—When the famine is declining, people will begin to leave off themselves. Care must be taken by reducing the wages, as prices fall, to prevent Government competing with ordinary employers of labourers. An increased enforcement of distance test may also be necessary, but all sudden changes should be avoided. It will be found that in the great majority of cases, even on what are called subsistence rates, labourers have saved enough to take them home. In cases when money has not been saved, labourers have been given money to enable them to reach home, and have also been provided with a *khurpa*. Persons who are physically unable to support themselves are still in the Agra poorhouse, and I do not know how we shall be able to get rid of them. The poor-house started in the famine of 1838 lingered on in Agra until now, and at the beginning of the present famine there were inmates who had been there for forty years. This poorhouse or dharmsala, as it was called, was supported partly by municipality and partly by private subscription.

Mr. Whalley. — At the close of a famine the labourers usually melt away of themselves. If they do not, and it appears that a sufficient task is exacted and only a subsistence rate of wages paid, it is probably because their homes are at a distance.

Those who live near will have left the works and those who live far off will remain.

Then it will be necessary to reform the gangs according to villages and parganas, if they were not originally so formed, and calculate the distances to each pargana. The next thing is to separate those who are only deterred from leaving by having no means for the journey, and pay them at the rate of one day's pay for every ten miles they have to go.

If a residue still remains, and it is necessary to close the work, they should be made over to the civil authorities, who will receive them into the poorhouses or put them on small works according to their strength.

Mr. Stoker.—I think the plan adopted in Gorakhpur will probably be found the best. It is to open a workhouse and, closing the works, refer to it all applicants for relief. If the necessity for State relief have really ceased the measure will be effectual. None but the really necessitous will enter a properly managed workhouse.

It would probably be well, as the famine was declining, before resorting to this final measure, to weed the works by application of the distance and labour tests. The numbers remaining to be dealt with by the workhouse system would be few and easily managed.

At a still later stage when the workhouse was broken up the persons discharged received, I believe, a small allowance to enable them to return to their homes or start fair again. Before the final breaking up it would be well to have all the inmates of the rural workhouses drafted into the central workhouse, unless they prefer to return to their homes (when they might be assisted to do so). This operates somewhat as the distance test.

BENGAL.

Mr. Magrath.—When rain has fallen sufficiently in any portion of the subdivision, notice should at once be given that the work or works fed by people of that portion of the subdivision will be closed in a stated number of days. The civil officer must then make arrangements to see whether the landowners can advance to their ryots, and, if not, should advance to the Zemindars a sufficient sum (on security and recoverable) to maintain his ryots. A three days' pay should be given to the people to start them, and the staff of Public Works officers should, with regular professional beldars, set to work to finish up the roads, &c. in progress. In the famine of 1874 we acted in this way, except that it was not necessary, as a rule, to make advances to Zemindars who were already under advances. The poorhouse people were sent home, and they were given tickets for rations which they sent for weekly—the circle officer making his rounds and striking off from time to time the names of those whose friends became able to support them. The only people that we found unable to support themselves at the end of the famine were those who had never been able to do so.

Mr. Kirkwood.—It may also often be that the cultivator has not the requisite money for the purchase of seed corn, or any fund sufficient for his support while he is labouring in his fields instead of on the works. In these cases it is important that the Government should make advances free of interest and repayable by fixed instalments spread over one or two years. In the North-Western Provinces (1868 to 1870) more than 10 lakhs of rupees were thus advanced by Government. In the Behar famine (1874) a very much larger amount was advanced. I think, in the latter instance, advances were somewhat overdone, and many people thus supported themselves in semi-idleness, who should have utilized the idle days during the cultivation season by labouring on the road. Advances were also made to well-to-do

ryots, which enabled them, according to their custom in other years, not only to support themselves during the cultivating season, but even to employ hired labour.

I quote at length below what Sir George Campbell wrote in March 1874 on the subject of these advances. I do not concur in the plan of making advances through mahajuns. But, in Bhagulpore, I found a system of advances through Zemindars for distribution to their ryots, and direct to villagers themselves, either on a joint village security or on individual security in the case of substantial tenure-holders, to answer admirably. In Bhagulpore and elsewhere, I believe, in Behar, these advances were made in the grain which Government had imported. The grain was valued at the then rate at which Government was selling from its stores. Deeds were drawn up pledging the repayment of the money in certain instalments, and those deeds were registered. In the case of cultivators taking advances, otherwise than on joint village security, a schedule of any timber, houses, cattle, &c., which were given as pledges for repayment was appended to the deed. I believe the whole amount of the advances thus made in Bhagulpore was recovered within a year or 18 months. Even the poorest cultivator, so long as he held land, was included, if he desired, in the joint village bond, and got his share in the grain advanced to the village. 1,20,000 maunds of rice, valued at about three and a half lakhs of rupees, were thus advanced in June, July, and August. Of this quantity about 80,000 maunds were advanced to 22,000 ryots direct, and 40,000 maunds to 110 Zemindars for distribution to their tenantry.

Registers of all these advances were carefully kept up. Every person, other than a well-known Zemindar, applying for these advances had to appear in person before the district relief officer, by whom only they were granted. The application was then checked by requiring each person to declare verbally how much he wanted, why he wanted it, what property he had to pledge, and by seeing whether his name was on the petition, and that the petition was correctly worded (a form was drawn up), leaving no loophole for an escape from liability. Some reliable person from the village or its neighbourhood, and also the village putwari, had generally to attend to verify the statements of the applicants, and records of the recently introduced road cess were also available for that purpose. Whenever deemed desirable, the application, before being granted, was sent to the circle relief officer for inquiry and report by means of his subordinates and group superintendents, of whom more will be said under the head of house-to-house relief. The advance ultimately granted was, after the deed had been duly registered, paid by orders for grain on the Government grain store most conveniently situated.

BOMBAY.

BOMBAY.

Colonel Jones.—Due warning should be given to the people to enable them to make their arrangements for leaving the work, and assistance, if necessary, either in money or food, obtained from the civil authorities to enable them to return to their homes.

General Wilkins.—It was not a custom, at the close of the last famine, to give the people money to start again on their ordinary way of life.

Those physically incapable of exertion were taken care of in the poor-houses at the close of the famine. These relief houses were kept open as long as they were needed.

Mr. Norman.—When a famine is declining, many of the labourers leave the works of their own accord. To force others to go, task work must be introduced and gradually enforced with strictness. When the famine is still at its height and a work is approaching completion, arrangements must be made for drafting the labourers, with their muccadums and karkuns, to another work. Certain villages must be selected at places along the route where they will be fed on their journey. It has never been customary to give discharged labourers money, but they have been provided with passes to enable them to obtain food at certain villages on the way to their homes. Persons who remain in a weak physical condition are at last taken to a relief house, where they are fed until they regain their strength, or, if sick, they are treated in hospital.

Mr. Spry.—If a work is closed before the necessity for relief has subsided, the labourers must be transferred to some other work. My experience has been that when from rain falling the people find that there is a chance of getting employment in their own villages they go off very rapidly and voluntarily. They did so in the famine of 1876–77. Ordinarily speaking, nothing was given to labourers so going off; but in a few cases where it was found that people stayed from inability to start at their ordinary occupations they were assisted from private funds. After works were closed, the relief houses remained open for those not physically able to support themselves, but as times got easier, all these gradually went off to their homes and to their friends, so that in a short time the relief houses closed from having no inmates. There was no disposition to remain on for an indefinite period.

Mr. Moore.—I think that the people should be sent off with bread, for the way to their homes. No money should be given, and none has been given. People unable to support themselves have been kept on at a relief kitchen till they recover.

Mr. Hamilton.—When a famine is declining, I think it will be found that the labourers gradually drop off the works, which are never so pleasant nor so profitable as to induce people who can live otherwise to remain on them. Heads of families leaving should be made to take all their dependents with them, including those of their family who are unable to work, or who always live on charity. I never heard of money being given to people on leaving work.

Mr. Percival.—The people will go away when the famine is declining and need not have money given them. If a work is closed during the famine, the labourers should be offered work elsewhere, and those willing to go be paid for the time required to reach the other work. The weak will go away at the end of the famine as well as the strong, if they are made to work according to their ability.

Colonel Anderson.—The labourers will ordinarily be only too glad to go to their homes when the pressure is over and ordinary work becomes avilable, and will gradually discharge themselves. If there was any slackness in their departure, wages should be gradually reduced to a bare subsistence point. I am not aware that it has been necessary to give money to people on departure; they always had some small savings. The last class of people mentioned in this question would resort to their former mode of life, begging and living on their relations.

Mr. Robertson.—During the famine, when a work is approaching completion, the labourers are drafted to another work. When the famine is declining, far greater strictness is used in giving tickets for admission to works; but, as a rule, as soon as prospects brighten, all those who have hopes from the improved season take the matter into their own hands and decamp. A good fall of rain has in one day led to as many as 2,000 to 3,000 people leaving a single work, even without the wages due to them, so anxious are they not to lose a favourable opportunity for preparing their lands.

The labourers are carefully mustered by the district officer in famine charge of the taluka, and all who are cultivators are sent off to their homes.

Those who are sent to other works, or discharged to go to their homes, are given enough money to support them to their homes. No money has been given to start them again in life, but tagai advances have been made to cultivators to enable them to buy seed for sowing and to buy cattle to plough their lands. Such advances after the late famine, in the districts noted below, amounted to—

Sholapur - -	Rs.	95,267	0	0
Satara - - -	„	15,603	5	0
Poona - -	„	58,743	0	0
Ahmednagar - -	„	7,677	0	0
Total -	Rs.	1,77,290	5	0

Mr. Bosanquet. — When the famine here was declining, the people left the works of their own accord. On a work being closed they were drafted to other works, being paid on the way by an officer deputed to accompany them. They were often, however, unwilling to proceed to a distance for work, and used to desert on the road. No difficulty was experienced, so far as I am aware, in dealing with labourers "who to the end continued in a physical "state in which they were unable to support them-"selves." No such difficulty was brought to my notice.

MADRAS.

MADRAS

Mr. Longley.—As a rule, when famine is declining or over, laborers will discharge themselves. When the work is very distant, say anything over ten miles from their homes, they ought to receive enough to cover the cost of the journey home, and, if discharged in large numbers, ought to be accompanied by a special officer whose duty would be to pay them subsistence allowance daily and see that arrangements were made for food and shelter at each stage.

When a work is closed the famine not being over, the greatest care is needed to see that the coolies are transferred with proper attention *en route* to a new work.

It has not been customary to give money to laborers discharged to enable them to reach home and start again. As the famine is not over, the occasion has not arisen. This ought to be done.

Those who to the end continue physically unable to support themselves should be retained in hospital camps until recovered. No fresh admissions should be allowed to such camps after famine operations have been closed, and they should be kept going until numbers in them are so small as to admit of transfer to the nearest dispensary.

Mr. Webster.—Laborers should not be discharged from works when the famine is declining, but only when the works are stopped. In this district when works are stopped it has been customary to transfer the coolies to other works.

Mr. Price.—I would, when a famine is declining, go over works and turn off the most able-bodied first. I should not wait until the famine was over to do this. In Cuddapah we closed works by sending the people away gradually in batches, which caused no murmuring, and, I believe, no inconvenience or trouble to the people themselves. One can form, for certainty a month beforehand, a pretty fair idea as to the necessity for keeping works open or not, and this month can be employed in *gradually* reducing numbers until those who are left form so small a number that there is no difficulty in getting rid of them.

This expression of opinion refers, of course, only to works provided in each taluk of a district in which there is no difficulty in the people finding their way home in two or three days at the outside. As regards works at a considerable distance from the permanent residence of the coolies, the best plan, in my opinion, is to draft them back in bodies of 500 a day, feeding them at stations along the route, at which hutting should be provided.

With larger bodies than 500 a day it becomes difficult to manage properly. I would give no batta for the road, but would provide food and shelter at convenient points, sending some responsible officer in charge of each party. I never have given money to persons discharged from works, nor have I had to deal with those who to the end continued in a physical state in which they were unable to support themselves. We always treated such cases by taking them off the works and putting them into a poor-house.

Mr. J. G. Horsfall.—The laborers left readily enough when good rain fell. Very few lingered on and had to be discharged. Mr. Sewell writes :—"In Trichinopoly I was instrumental in establishing and working a system which seemed to answer well. At intervals of 10 or 12 miles along the principal route that the discharged laborers were to take were established small camps. The officer at the works discharged gangs every day giving them one meal, no money. They were fed at these small camps all along the route to the principal relief camp of their own district, and thence the district officer arranged for their return to their homes."

Clause II.—No.

Major Baynes.—I am of opinion that, under the condition of the famine being over, most of the laborers would discharge themselves, so much so that, as long as any considerable number of persons (not professional laborers) remained on a Class I. work, I should assume that the distress consequent on the famine was not yet removed. I think the best way of settling the matter is to presume that, if they can live in their villages, the majority will certainly go to them; if the work be closed simply on completion and the famine was going on, it would of course be necessary to draft them to another. I should give to laborers returning to their homes on a work being closed the same batta that they received to come to the work.

Mr. Oldham.—My experience has invariably been that the laborers melted away of themselves without any arrangements being made or being necessary for their discharge. In a few instances a few persons, whose physical state incapacitated them from supporting themselves, were left, and these were offered shelter in the relief-houses (institutions which always survive works), and those who accepted it were subsequently discharged under special arrangements, generally with a small donation from charitable funds.

Captain Morris.—Works should be opened within a moderate distance of all, and then it would not be

CH. III. QN. 18.

MADRAS.

necessary to give any gratuity to laborers on their being discharged. As long notice as possible should be given on all works, and in the most public manner, of the intention to close them, so that the laborers might be able to save enough to support themselves on their journey home. This, I consider, they could easily do. Special arrangements must be made for those who, when the works are closed, are still unable to support themselves.

Hon. Gajapati Row.—Cultivating classes and field laborers desert the relief camp sometimes without even giving notice to those that are in charge of the camps soon after they see that a favorable monsoon has set in, and I think they hardly need any assistance when their houses are nearer. But in other cases so much as can meet their requirements in their journey homeward may be granted them. This is seldom adopted at present.

MYSORE.

MYSORE.

Major Scott Moncrieff.—If possible numbers ought to be allowed to drop off of themselves. As the famine ends probably some works will be finished, and others need not be opened in their place, the workpeople being offered the alternative of going to works at a distance (see last clause of reply to question 5). If the work closes before the famine does, every effort must be made to start another in its place without a single day's delay. I have no experience of the very end of a famine.

Colonel Johnson.—On piece-work the people would be simply informed that the work is closed, and where those that still require it will find it elsewhere. Those who cannot or will not work I suppose Government would have to go on feeding till they can find some one else to do it for them.

CH. III QN 19

QUESTION 19.—DESERTIONS FROM RELIEF WORKS. MOVING OF BODIES OF MEN TO WORKS OVER LONG DISTANCE.

Has it been found that persons after admission to relief works wilfully desert from them, and to what extent do such desertions commonly indicate excessive severity in the application of tests, insufficiency of food, or improper treatment of other sorts? Are they often due to other causes, and if so, what? How should such results be guarded against? Under what circumstances would you recommend moving bodies of men to works over considerable distances? Should this ever be done as a preventive measure to weed out those who are not in absolute want of relief or only as a step that is expedient for the sake of transferring them from less useful to more useful work, or to admit of their being more easily fed or supervised, or to prevent sickness and the like? If the distance is more than one day's march, what arrangements should be made for hutting them for the night and for paying them or feeding them on the march? Narrate the history of any case within your knowledge in which more than 500 people were moved, or attempted to be moved, more than 20 miles, and state any difficulties the movement involved, and how they might best be avoided.

North-Western Provinces.—Desertions take place, sometimes due to distance test and piece-work. Contractors employed only the able-bodied, and exacted full task, and so gave the works a bad name. Labourers may be moved.

Bengal.—Labourers have been known to desert when piece-work was enforced, at which they did not think they could support themselves, or because supervision was strict. There is no difficulty in moving the people. They will go to work when it is offered.

Bombay.—10 answers. Desertions took place, not from severity of tests or ill-treatment, but caprice, or to get from strict supervision to less strict. As to moving men long distances to weed out those not in want, opinions differ, but the majority think that movements of large bodies long distances should be undertaken with caution, and avoided if possible.

Madras.—27 European and 2 Native gentlemen have replied.

Desertion does occur, and is ascribed to idleness, love of home, separation from relatives, delay in payment of wages, discomfort inseparable from camp life, cholera, rigid enforcement of tasks, and fraudulent treatment by Native officials. Instances are given of transfers of large bodies of labourers long distances without difficulty, and many officers think it unobjectionable when it is desirable to transfer labourers from one work to another, and sometimes to weed out those not in distress. Other officers think such movements are not to be recommended, as being difficult and costly.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Major Jeffreys.—Yes; wilful desertions are of very frequent occurrence where the distance test is in force and piece-work is exacted. Even moderate severity in application of tests invariably brings this result. When this occurs to a large extent and is not due to absence of distress, it is necessary that the officer in charge should have ample discretion to raise rates or employ daily labour or cowrie work to induce them to stay; a good deal must depend on the personal influence of this officer and his tact and power of management.

The best plan to prevent wholesale desertions is (1) to avoid application of distance test as much as possible; (2) to avoid a system of charitable relief in the villages, which makes the people disinclined for any kind of work whatever; (3) to open out works to all comers far and near; (4) to employ for earth-carriers the cowrie system, by which a perfectly equitable distribution of wages is secured; (5) to give full discretionary powers to the officer in charge, subject to condition that he must show a reasonably fair equivalent for the money expended. If it can be shown that the wholesale desertions are due to absence of distress, then the work should be shut up forthwith or be thrown open to contract at ordinary rates.

Mr. Colvin.—They come and go as they please; and as a rule stick to the works like wax. Only habitual beggars sent in from the towns, &c. desert. These desertions indicate nothing but the depravity of the habitual beggars' nature. This kind can only be cured by easy tasks at first, growing in severity as Lazarus and Dives get confidence in one another; and in unfailing return by the police of these people to

the works, whenever they leave them. They can always be recovered, as they invariably return to the towns, which are swept clear of them every day.

Subsistence allowance on the march was always given when the march was over six miles; 15 miles was a day's march. We never moved over 20 miles. The labourers found their own way. They were paid the subsistence allowance on the evening before they marched, together with their wage for the day that had just closed. No hutting was necessary.

Mr. Sandys.—During the last cold weather if even a fair task-work was exacted, the class of people who usually came to the works, such as juláhás, chamárs, &c., would not complete it, and, being unable thus to earn a bare subsistence in many cases deserted the relief works.

No desertions took place when subsistence wages were given, whether a full task was performed or not.

The weather also was unusually cold and damp, and many of the applicants were insufficiently clad, and no orders were then issued for hutting the labourers, and only half wages were given on rainy days.

The people who resorted to the works had not, as a rule, been accustomed to do any earthwork and were generally unwilling to go any distance in search of it. Moreover, the contractors, instead of persuading all their tenants and the inhabitants of their villages to take work under them, as was hoped would be the case, employed only the able-bodied and demanded a full task from them. As soon as this became known, and the number of weak and feeble persons unprovided for increased, daily labour gangs were started, but the action of the contractors had no doubt given the relief works a bad name. Daily labour gangs only have for some time now been employed and no cases of wilful desertion from them have been brought to notice.

The only cases in which it has been found necessary to send bodies of men to a considerable distance have been when they have come from the neighbourhood where the work is going on, or on the completion of a work, or to secure more efficient supervision. They have not had to be moved on account of any difficulty in obtaining supplies or on account of sickness. When the distance has been more than one day's march, the labourers have either been advanced wages sufficient to enable them to reach the work to which they have been transferred, mates being sent in charge of each gang, or the officer in charge has marched with them and paid them on the way.

Mr. Beahen, Assistant Engineer, brought 2,326 men from Sadullaganj camp to Budaun, a distance of about 20 miles, where he paid the labourers the same evening, and marched them off the next day to camp Kumargaon, nine miles from Budaun, where he paid them in the evening. The movement involved no difficulty. The men camped for the night under topes of trees.

Mr. Tracy.—Persons frequently desert relief works, but I have no reason to ascribe their desertion to any of the causes specified. As far as I have observed, people leave the works when they think they can do better for themselves elsewhere.

It is not advisable to attempt moving bodies of men to distant works, except to prevent sickness.

Mr. Kennedy.—The district engineer moved more than 450 men a distance of 28 miles in two days. The labourers were arranged in gangs of 50, and were headed by their gangsmen; the whole party being in charge of an overseer. They were paid each day at the halting ground by the district engineer. The halting ground on the first day was in the neighbourhood of a town, and on the second day in the vicinity of a large village. The march was successful, chiefly because the labourers had previously fallen into their places when working under these same mates. Each man knew his mate and his gang, and the whole gang was ready to move in one body. The attendance of relief labourers is apt to be precarious, because, if possible, they return to visit their own homes for a short holiday, taking any grain they may have spared to their relations who have stayed behind. Desertions were very common last year on account of the severity of the task imposed and the difficulty of obtaining a subsistence. This year they were much less common.

Mr. Lawrence.—At Agra people did not wilfully desert from the relief works; but they deserted in large numbers from the canal works at Shikohabad, to which they were sent by train.

Bodies of labourers may be moved to works at a considerable distance, both as a preventive measure, to weed out those who are not in absolute want, as, for instance, when the famine is passing off or when the works in the neighbourhood of a large city are crowded by the wives and children of men in other employment. Also to prevent sickness or get them to a better supervised or more useful work, or to relieve a work already overcrowded. If the distance is more than one day's march, at the place where they have to halt a sarai should be hired, or a grove of trees selected. The tahsildar of the pargana in which the halting place is situated should have timely notice of the march, so as to provide sufficient supplies. On arriving at the halting place the labourers should be paid their wages by the overseer in charge, in presence of some official, and allowed to purchase their own supplies. Labourers were in several instances sent from Agra to a distance of over 20 miles, and the arrangements described above were found to work well. At first, difficulty was experienced by labourers deserting after receiving payment on reaching the first stage, and returning to the original work, but this was obviated by the plan of putting a distinctive mark on finger-nail by caustic.

In moving bodies of men it is very necessary to send a sufficient number of water carriers along with them.

Mr. Stony.—I do not remember whether there were many desertions from the relief works in 1868–69, but I should say desertions would most commonly be brought about by a combination of the severity of the labour test and insufficient food. It is most difficult to move large numbers of people even a short distance of four or five miles. I know at Jhánsi when we weeded people fit for work out of the poor-house and sent them to relief works, there was often a complaint that numbers of them had run away. In many instances, after wandering about they would return to the poor-house in an exhausted and starved state. The class of people who mostly did this were those not accustomed to out-door work.

Captain Currie.—I have never known people to desert from being overtasked. In one instance, when a work was started without the exaction of a task, a great number fell off as soon as the task-work system was introduced. This was the result of indolence on the part of the people, who thought they were to be supported by indiscriminate charity; there was no severity in the application of tests or improper treatment of any sort. People may be moved in large bodies from one place to another, and there is never any necessity of putting them on the road if the journey be even more than a day's march. At the end of each day's march they would be paid a day's wages, as if they had been at work. We have never had occasion to move so many as 500 at one time.

Ch III. Qn. 19.

Bengal.

BENGAL.

Mr. Magrath.—The only instance of desertion which came to my notice was the desertion *en masse* of 20,000 men, because a system of piece-work was introduced by which they were unable to obtain sufficient nourishment to keep them from gradually starving. Rather than slowly starve they laid themselves down to die at once, and but for the fact that I speedily got Sir Richard Temple to the spot, and that the orders were relaxed, they would have died in great numbers. On this they returned, but in such a condition that many of them were unable to do more than half a day's work. Such desertions can only be due to folly or worse on the part of the Government or its officials, and I cannot suggest safeguards against results which never occur except where doctrinaire systems are forced on without consideration as to the practicability of carrying them out.

To attempt to move large bodies of men would be childish. You cannot keep them together without vast armies of soldiers or police. Let the people know where they will get work and they will go 50 miles to it. Even the Nepalies found their way down in large numbers early in the famine of 1874 to works in Durbhunga, and when the works in Goruckpore were hastily closed by the North-Western Government, the people with no means of subsistence passed over to the works in Chupra, often very many miles from their homes. I consider any arrangements for marching them in a body utterly wasteful, and also likely to frustrate its purpose by leading them to desert; whereas they will willingly go to the works of themselves, and if told that at any particular work there is no room for them they will move on.

I do not see that it would necessarily weed out those not absolutely in want of relief, and as none but really useful works should ever be started, I do not recognize any grades of more or less useful works. In the rains, or rather in the absence of rain, when we wanted bunds made, we closed all the other works near, and the people came to the bunds at once. Hutting or paying them on the march would only be an unnecessary expense. Give them an advance of one day's pay and they would go as far as you are likely to require them, carrying their food along with them. In no case that I know of was a body of more than 500 people attempted to be moved in a body 20 miles, and I should be sorry to try and make any such futile experiment. The people are very childish, and though easily led are very difficult to drive, and begin to suspect that they are to be forced to emigrate, or even are going to be used as victims for human sacrifice.

Mr. Metcalfe.—It has been found that persons after admission wilfully desert from relief works. In Behar, when petty works were numerous, labourers left frequently one work for another, sometimes owing to quarrels with the overseers in charge, at other times when piece-work was enforced in place of daily payments. If the officer in charge of the work was a hard taskmaster, or even insisted upon an honest day's labour, the malingerers amongst the workmen would move elsewhere and try their luck on some other work.

I can conceive no difficulty in moving a body of men from one work to another, whatever be the distance. The coolies would carry their grain with them if the intervening country is a famine tract. An officer would accompany them, and grain would be served out at the close of the day's march. No hutting for the night would be required: a year of famine is necessarily a year of drought, and natives can well camp out at night in dry weather.

Bombay.

BOMBAY.

General Wilkins.—At the commencement of a famine people admitted on relief works constantly deserted from them. Such desertions indicated on the part of the people—

1st.—A desire to better themselves.

2nd.—A desire to unite with friends.

3rd.—A desire to escape the severity of task work.

4th.—A desire on the part of emigrants to return homewards.

Bodies of men should only be moved over considerable distances when it is desired to close small works and to relegate the people to large works; also at the termination of a famine to accelerate their closure.

The people should be sent in charge of their muccadums and karkoons, and be paid by the way. No hutting is necessary, at least in the Southern Division, as the villages are numerous and accommodation sufficient.

There is no difficulty in moving the people if they require relief.

Large bodies were relegated to the Begum tank near Bijapur, and to the Gokak Canal, thirty miles from Belgaum, from the general works in the Kaladgi district. This took place at the close of the famine. The people sent did not arrive; they melted away from those in charge of them. The famine was over.

Mr. Norman.—Persons admitted to a relief work are continually in the habit of deserting from it. During the last famine this went on to a very large extent, when the labourers were transferred from Civil to Public Works Agency works, the reason being that the supervision was stricter and the work exacted more severe on the latter than on the former class of works. As a general rule, when the orders of Government came to be fully understood, I do not think that the tests exacted on works under Public Works officers were too severe. In a few instances in the early part of the famine this may have been the case. This can only be guarded against by a strict observance of rules. Persons usually desert because they dislike leaving their homes, and they object to the scanty fare, hard work, and indifferent shelter which they have to put up with at the camps.

As a general rule, I do not think persons should be transferred over considerable distances for the purpose of weeding out those who are not in absolute want. But few of the latter class are to be found on the works, and they yield a fair return for the scanty wages they receive. If the distance to be traversed is more than one day's march, the labourers should be moved in small bodies. Accommodation can thus usually be provided for them in dharamshalas and empty houses, and arrangements must be made with the village officers at the halting places to provide them with food. This system was adopted during the last famine and answered fairly well. I know of one case in which upwards of 500 men were moved from the Mutha Canal to the Nira Canal, about 30 miles, towards the end of the famine. Many deserted on the road, but a large number reached their destination. No great difficulties were experienced. Most of those who deserted probably returned to their homes, and the remainder joined some other work.

Mr. Spry.—People did sometimes desert from relief works, but from inquiries I could make I did not discover that their desertion arose from excessive application of tests, insufficiency of food, or improper treatment. The task tests were more efficiently exacted under the Irrigation Department than under the ordinary Public Works Department, and desertions from the works under the former Department took place in the hope of getting on to works under the

latter. In one instance a large body of people came to me off a work, complaining of the task test. I found that they objected to any task at all, and that they had been instigated by their muccadums and mustering karkuns. I at once dismissed these muccadums and karkuns, and debarred them from further employment. The body of the people then returned to their works, and I never heard any more complaints. Desertions and strikes are almost invariably instigated by the muccadums, &c., and the dismissal of these soon brings the people to their senses.

I would always recommend the moving of bodies of labourers to considerable distances, wherever it was expedient either to weed out those who should not be on works or to transfer them to other works for any cause whatsoever. If the idea got about that such moves should not take place, all management would at once cease.

No arrangements are necessary for hutting people at night when on such marches. All such people are quite accustomed in ordinary times to spending their nights in their fields or elsewhere; and I do not see that extra care is required for them during a famine. They are quite up to rigging up tents out of their blankets. As regards payments during the march, they should be moved the day after their weekly pay-day, and then they will be in funds to carry them on their journey. Most probably the shopkeepers who supply them will accompany them; or if not, notice can be sent on to the villages *en route* that so many people may be expected on such and such days. Moves like this were continually made in this district without any disorder or inconvenience. I remember one case where I saw 2,000 people on a road work transferred to a tank work more than 20 miles off. They started in batches of 1,000 each, and after a two days' march arrived quite happily. I do not see what difficulties there are in such movements, so I cannot state how they are to be avoided.

Mr. Charles.—About 2,000 people were attempted to be moved towards the close of the famine from the Bankapur works to Kalghatgi, more than 20 miles.

The difficulty was to prevent straggling and desertion, and as a fact a very large number did desert. Nothing short of a strict police guard could have prevented this, as the overseers and makadams are quite unable to look after so many.

Mr. Moore.—Desertions have been very exceptional. Bodies of men should be moved when it is expedient to transfer them from less useful to more useful work or to prevent sickness. I have moved bodies of men 70 and 80 miles in charge of police and revenue peons and a mamledar's karkun. I cannot say how many men exactly without reference to records, which are not with me, but not more than 60 or 70 people at a time. They started with cooked bread for the journey, and if necessary to cook fresh bread on the way, sufficient flour was sent with them, and the karkun and sepoys saw it cooked and fairly distributed.

Mr. Hamilton.—In cases where people were transferred from one work to another, subsistence allowance for the days occupied in travelling was given at the end of their journey. Ten miles a day is an average journey in this district for a whole family.

Mr. Percival.—The reasons given for leaving work are endless. If many persons leave, the revenue officers will hear the reasons alleged, and if necessary let the officer in charge know. The only objection to moving a large number of persons to a distance is that they will not go. It is not difficult to organize the march of a party, even though they have to take food for the road with them. A responsible person and some police must go with them to keep order and prevent difficulties. They will sleep out at night and carry their bundles and tools. Probably as many as 500 should not march in one party; 300 at a time would be more manageable.

Colonel Anderson.—Desertion was not uncommon. Restlessness and wandering habits a common cause, without other adequate reason. I heard of one relief work in Canara becoming unpopular because the people of it were required to be in their quarters and out of the town after 9 at night, and to abstain from tom-toming in their quarters after the same time. It is difficult to see how desertion from relief works could be guarded against, as it would be difficult, if not impossible, to discriminate between persons who had left from legitimate reasons and those who had left from mere restlessness with no proper means or plan for obtaining a subsistence elsewhere. Men may be properly moved to some distance towards the end of a famine to induce the voluntary lessening of numbers; they may certainly also be moved to utilize their services better. But great care should be exercised during the time of pressure in moving large bodies far; it may tend to their abandoning the works and spreading through the country, giving much trouble to reclaim them when fallen into bad condition. Two days' journey or 30 miles is as far as can be well managed. A move in threatening weather should be avoided or the people moved in batches of a few hundreds, who could get shelter, if need occurred, at a village on the way. Provision for halting *en route* is out of the question. The people, if living on works, would always have the means of supporting themselves for a couple of days without special provision.

In Kaladgi last October the labour gangs on roads in the east of the Collectorate, over 50,000 in number, were paid off in the middle of September and told to go, if they wanted work, to a tank at Bijapur, or a tank in the north of the Collectorate, or to the Gokak works, all distances over 30 miles for the large majority of the people. Very few went, and those few soon left. There was reason to believe that numbers were on the roads, who did not need to be there longer, as rain had fallen plentifully, and agricultural operations had commenced to revive, and that only those who really required work would accept the move. This was true as regarded the large majority, but some proportion, possibly ten to twenty per cent., did require work still. The tank works were unpopular for one undoubted reason, that stricter supervision was reported to be imposed than was practicable on scattered road works. False reports, too, of cholera on the tank works were set afloat by interested persons, karkoons and muccadums employed on the closed road works. It was evident that, whatever the people might do, they had no intention of going to the tank works. Some might go to their homes and find means of support there, and some would wander about in a purposeless way, looking for means of support, but without any definite object in view; consequently search was made for people wandering about without work, and villages were examined with increased strictness, and all people appearing really needy and asking for work were employed on relief wages for a week or two, when, with the continued improvement in the season, they all—or nearly all—dispersed to their homes. It is evident that while a famine is in its intensity serious difficulty might result from attempting to move the people in large bodies to works which for any reason, good or bad, are unpopular. Still it may happen that such a move must be made, in which case the greatest vigilance in the country on the flanks of the line of movement would be necessary to reclaim people wandering away without means of subsistence before they allowed themselves to get into such low condition that their speedy recovery would be a matter of difficulty.

Mr. Robertson.—Yes, people do desert largely from relief works, often for no apparent reason whatever, often because they do not like the locality, because they have been on some light Civil Agency work, and do not like a task as required under the Public Works Department. A case or two of cholera will drive many away. The tank work at Ashti in the Sholapur district is one that was notably unpopular. Yet,

CH. III. QN. 19.

BOMBAY.

after inquiry made, no particular reason could be given. Probably the officer in charge was strict, but he most certainly was not severe.

As a rule I am averse to moving bodies of men to a considerable distance. It will certainly drive away those who ought not to be on a work and are not in absolute want of relief. I consider that proper and constant mustering of the people by the district officers on all works, both those under the Public Works Department and under the Civil Agency, will effect this far better, while the distance test also ensures those who ought not to be on the works being kept away. If you desire to move men to a more useful work, this can only be done gradually. I can confidently affirm, from much experience, that they will not go to any *very considerable* distance. I made repeated efforts to send men from Sholapur and parts of Poona to the Dhond and Manmad Railway works, but they *would* not go. Repeated attempts were made to send men from the Sangola and Malsiras talukas in Sholapur to the Nira Canal works, and they would not go. On one occasion I sent a body of 500 men under a party of police from Karmala and Malsiras to the Nira Canal works. They had then grain with them. Only a few arrived, the rest having deserted on the road, and those who arrived, I learnt on a subsequent visit to the Nira works, had after a few days deserted the works, not liking to be so far distant from their own district. I consider the difficulties, as regards the removal of large bodies to a considerable distance, are so great as to render any attempt at such a step in every way most undesirable.

Mr. Bosanquet.—On this subject the Executive Engineers will be able to give more accurate information than I can. I have already expressed my opinion that many persons were deterred from accepting work on account of the insufficient wages allowed. The same cause no doubt operated in leading persons really in need of assistance to leave the works in order to try their chance of getting a precarious subsistence by begging and by feeding on leaves and roots. There may be occasions when it is necessary to draft men from one work to another, but it would be well if arrangements could be made that the distances travelled should not be great. Such occasions should not, I think, be sought simply in the hope that the labourers will desert on account of the distance of the new work. In case of an epidemic breaking out on a work, there would, I suppose, often be no resource but to close it. The only feasible way of transferring labourers from one work to another is by placing them in charge of some person whose duty it will be to pay them daily. During a great part of the year there need be no difficulty about hutting. I know of no case in which more than 500 people were moved or attempted to be moved at one time from or to a Civil Agency work.

No civil officers were in this district associated with officers of the Public Works Department in supervising relief works, and it does not appear necessary for me to say anything on this subject, except that I am not aware of any advantage to be obtained by such an arrangement.

MADRAS.

MADRAS.

Sir W. R. Robinson.—Moving large bodies of men, women, and children with safety over considerable distances is at any time difficult and perilous in India, as we know from moving even one regiment with its women and children—many provisions and appliances notwithstanding. Moving masses of famine-stricken creatures in drought, famine, and decline of strength under great climatic and other disadvantages (want of shelter, &c.,) is so obviously disastrous that it should be avoided in every interest so far as possible. The attempt to induce some 50,000 persons dependent on daily labor who were struck off relief in Kurnool, Bellary, and Cuddapah about the middle of May 1877, to the Nellore canal at the height of the famine, was simply a serious *fiasco*. The rejection of large numbers from district works in Bellary in order that they might assemble on the Bellary and Darwar railway works was at first an eminently unsatisfactory measure, and so on.

Mr. Longley.—It has been found that persons after admission to relief-works wilfully desert them. Those desertions have partly been due to demoralization of the cooly classes, who hate restraint of all kinds and have been seized by the spirit of wandering, but they have also been due to severity in the application of tests and to insufficiency of food, the result of being left unpaid for a week or even more. Such results can only be guarded against by a sufficiency of European supervision in the Department of Public Works by providing paymasters or cashiers in greater numbers and by subordinating all officials in the Department of Public Works to the civil officers in matters not strictly professional.

Bodies of men should not be moved over considerable distances to works unless works of utility *cannot be opened at a less distance.*

To weed out persons not in absolute need of relief the application of the distance test of ten miles as a preventive measure is ample. Any distance too great to be traversed back and forwards in the same day is efficient as a distance test. Coolies may have to be moved, because no work of utility is in progress close at hand, because the locality is unhealthy, because drinking water is deficient or unwholesome, because supplies are difficult to obtain in sufficient quantities; but for the mere purpose of a distance test ten or even five miles from his native village will prevent any cooly—a not fit subject for relief—from obtaining it on a work.

Where the distance is more than ten miles, which I take as equal to one day's march, shelter for large bodies must be provided *en route.* A bazaar should also be provided at each halting-place, so that coolies may expend their subsistence money. In my experience, not only has no such provision ever been made for coolies *en route*, but even when settled on a civil agency work the Department of Public Works have not always made provision for housing the coolies in their charge. Hence the continued ebb and flow between works and camps. Where only small bodies of coolies are moved, they may get along without special accommodation on the route, that to be found in villages by the way sufficing, but in all cases some one should accompany them to pay them their subsistence allowance daily; with a larger advance they would probably abscond and only turn up again when it was spent, or spend it all in one day, and come begging for more the next.

The following is from the head assistant collector Mr. LeFanu's division :—

At the end of 1877 a batch of about 300 coolies were transferred from Kallavi, a village in the Uttankarai Taluk, where they were employed on tanks, to Harur, another village in the same taluk, a distance of twenty-four miles if not more. From Harur the greater portion were transferred within a week to the Moropur-Makanur road, a distance of eight miles, and from the last-named road the able-bodied of them were selected and transferred to the Alapuram tank, a distance, *viâ* Harur, of twenty miles, so that within the short space of one month they were subjected to three transfers covering a distance of fifty-two miles.

At Kallavi I do not think any hutting accommodation was then provided for the coolies; at Harur they had none, and on Morapur-Makanur road they had not even the protection of an avenue.

This year another batch of 500 coolies were transferred from the Harur road to the Makanur road, a distance of eight miles, without any huts having been previously provided for them, and, as I have already said, the road has no avenue. Several of the coolies had to take shelter at night in the back verandah of the railway station at Morapur. The transfer was made at the latter end of June, and not till the middle of August were any huts provided, and then only seven small ones for 500 coolies. I have just* received information that almost all the coolies employed on the Morapur and Uttankarai roads are now being transferred to the Vaniar project, the distance in the former being 21 miles, and in the latter 24. The able-bodied working at the Vaniar were a month ago transferred from the Vaniar project to the Barur project in the Krishnagiri taluk, a distance of some 36 miles.

These transfers which are the most noticeable among the many that fell under my observation resulted, in each instance, in desertion on the part of several of the coolies, and clearly indicated excessive severity in the application of the test. In separating the able-bodied from the weakly, the duty was almost in all cases assigned to a native overseer, who carried it out arbitrarily and separated families.

Mr. Price.—I had the moving, as far as the Nellore frontier, of the whole of the coolies sent from the Bellary and Cuddapah districts to the Buckingham canal. I cannot recollect the precise figure, but I believe that the total was between 40,000 and 50,000. We arranged as indicated above, and the main inconvenience which we experienced was in the people being crowded upon us too rapidly. With parties of 500 we could manage well enough at all the halting-places; but as we had calculated upon only 500 a day, there was not a large enough staff, and until we put on extra men the coolies did not receive their allowance in time to permit of their making themselves comfortable. In a very short time, however, things settled down and we carried on the work without any serious hitch, except an outbreak of cholera which compelled us to alter one of our lines. There were two routes by which the coolies marched—one for those of the greater portion of the district, and the other for those from Bellary who were sent to us by rail and forwarded from our receiving station. We had one or two parties larger than 500 accompanied by an European officer, but I believe that those escorted by a native maistry were just as well looked after. The cholera and desertion were our principal troubles. There ought to have been more medical aid, but it was not available. Mismanagement, real or alleged, at the canal and over our border caused very many persons to return, and they, meeting those who were coming, spread all manner of stories and it was impossible to prevent a large number of the intending emigrants making off. I would have formed depôts at Cuddapah and Wontimetta which were our receiving points. In fact I began one at the former place, but cholera broke out so violently just at the time that we were compelled to break it up. Depôts at central spots would, I think, prevent crowding on the line of march and things would then go smoothly enough.

Mr. Grose.—I do not think people should ever be moved over distances to "weed" them; causes like those mentioned, viz., the prevention of sickness and the like may be sufficient. Generally, it will be best to give the paupers batta for the march and let them go. If they are very numerous, however, they must have a sufficient amount of grain doled out to them at the end of each day's march. If they get more than enough for one day a number are sure to desert.

Large numbers of paupers were sent from Bellary, Cuddapah, and Kurnool to the Buckingham canal. They passed through the district by four stated routes, and there were stages on each where a stock of Government grain and condiments were provided, and they were entitled to a supply. Huts were erected, but they always preferred camping under trees or in any village that happened to be near. When, as in the north, grain batta was given for several days at a time, they decamped in very large numbers. Only a small proportion of those who left the three districts I have named reached the canal, and when they got there they proved idle and troublesome. Some bodies brought cholera with them. European officers came in charge of some. I am strongly of opinion that this *quasi*-forcible deportation of unwilling laborers from one district to another cannot be successful.

Major Baynes.—Persons who have been DRIVEN to a work will naturally desert, but I do not attribute all desertions to this fact; for many I know when once got there in health, if kindly treated, and *regularly paid*, get to like the life; there are several powerful agents at work which cause desertion—natural idleness, love of home, separation from relatives, desire of change, discomfort inseparable from camp life, rigid enforcement of the task system, and cruel treatment at the hands of the native officials.

Mr. Oldham.—It is the commonest thing for persons in urgent want of relief to desert relief-works after admission to them. The most frequent causes are the want of special arrangements and special treatment for new comers, taskwork being required from laborers not accustomed to render it, and wages not being paid daily. Apart from these, such desertions do not necessarily indicate improper treatment on the works. It is not uncommon for a few factious persons, probably not altogether without resources, to draw with them a crowd of ignorant laborers, old people, women and children, who are in emergent need of relief, and there have been frequent instances of reasonless panic. Last year, day after day, bands of 100 to 200 laborers were carried from Adoni to Bellary, 66 miles by rail, and then marched 10 or 20 miles to the working-sites on the Bellary-Hubli railway, only to scatter and run away and wander back to Adoni, sometimes when within a few yards of and without even seeing the work they had to do. On questioning one band of these people as to the reason for their deserting they unanimously clamoured in reply: "They take twelve yards for the rupee." I could not ascertain that any one of them understood what quantity of work this very moderate demand represented, or even how much a single yard was. It appeared to be a mere parrot cry, the very utterance of which frightened them away.

The circumstances under which it is desirable to move large bodies of laborers to considerable distances have been alluded to in my answer on paragraph 5 (the distance test). I have frequently marched thousands of people distances of over 30 miles, and without the slightest difficulty. The last instance was in October 1877, when about 10,000 residents of the Kurnool district, who had taken refuge on the Adoni relief-works, were marched a distance of 35 miles from the work on which they were collected into the Kurnool district and made over to the authorities there. Not one of these persons was in ordinary good condition while most of them were excessively enfeebled and emaciated, some of them so much so that they had to be conveyed on carts. No difficulty attended the transfer nevertheless. No hutting arrangements could be made for them, but five stages were fixed, on an average seven miles apart, at which there were villages. The weather was rainy but the stages were reached early and the people had time to provide for their shelter. They marched in their working-gangs, with the gangsmen, gang-writers, paymasters, and superintendents described in the answer on paragraphs 16 and 17. They were paid daily and were accompanied by the grain-vendors who used to keep shops and stalls on the work on which they had

* 4th September 1878.

Ch. III. Qn. 19.

Madras.

been collected. They were followed by a small rear guard of police (a head constable and four men) with a few litters (bamboo ladders) and bearers, and a few carts as ambulances. The superintendents and the police returned over the route they had traversed and reported that there had not been a single casualty. The first 14 miles of the march were along a high road, the rest across country.

Captain Morris.—It was found that many persons left the works after admission. The distance test, which it was found necessary to apply, caused the greatest number of desertions; there was no other cause for them, so far as I could ascertain, at least I had no complaints, except about the Sunday wage, and on this subject I was besieged with complaints whenever I visited the works.

Mysore.

MYSORE.

Major Scott Moncrieff.—Desertions are frequent, and are often due to the stupid mistakes of Public Works officers and subordinates who cannot realize the situation and are needlessly severe and exacting. They are due to other causes too, chiefly the irradicable tendency to rove on the part of some of the poorer classes, who in a famine season are among the first to suffer. They have lived all their days from hand to mouth, never doing a good day's work. It is hard to make them do it now. If the police are trustworthy and efficient they should co-operate to prevent this.

As I have before written, I object strongly to the distance test as a means of weeding out those not in want. But it will often be expedient to remove from less useful to more useful works, or from a sickly place, or one where the water supply is bad, to another. If possible the coolies should be during the march confined every night in a suitable village enclosure. A trader should sell his food within this enclosure, and they should be allowed to go out for water, a few at a time. They should be paid daily during the march. In January 1878 over 3,000 coolies were successfully marched for a distance of about 26 miles from an unimportant district road, where they were breaking metal in the Toomkoor District of Mysore to work on a main trunk road. They were moved in three detachments, the deputy commissioner, the civil relief officer, and the Public Works officers, all being present. The two Public Works subordinates had so won their confidence that they were quite content to stop on and work with them on their new road. The journey was made in two days and they were paid daily.

Mr. Ricketts.—Yes; persons do so wilfully desert, and severity, insufficiency of food, or improper treatment are not commonly the causes, but mainly a vagrant spirit, a wish to try their luck elsewhere, also a vagabond disposition seeking to idle, beg, or steal, in large towns, and then to be sent back to work at the expense of the State. Police action can guard somewhat against such results; but after a time there arises the fear that disgusted and annoyed at repeated deportations and desertions ill-usage may be resorted to as a remedy. This is a great difficulty now experienced at the railway works, and apparently the only effectual remedy is a short legislative enactment authorizing summary trial by a magistrate or bench of magistrates and the infliction of stripes if the habitual deserter failed to show cause for the last desertion on which he was brought up. Even hard labour might be imposed, but it must be labour on the relief work itself and not in jails, which are overcrowded at such times.

I would not recommend moving bodies of men to works over considerable distances as a preventive measure to weed out those who are not in absolute want of relief; but it could, and sometimes should, be done for the purpose of transferring them from less useful to more useful work, or to admit of more easy feeding and supervision, or to prevent sickness and the like.

In some places it is difficult to find a suitable large work and then the physically weak, the emaciated, nursing mothers and children, &c., should be kept on small works, calculated to give employment to a few for some months and all others; which would mainly imply the able-bodied, or comparatively so, should be excluded and told to go to the nearest large work.

Colonel Johnson.—The question will no doubt be more fully answered by others. So far as I know, desertions do not so much indicate excessive severity or improper treatment on the works from which the people desert as excessive leniency and improper extravagance on others, and the hope thereby induced that by deserting one work for another the coolies will better themselves. I do not think the charges of severity or improper treatment could be made against the management of a single relief work in Mysore, but I believe desertions were common enough. The best way of guarding against such results is to foster in every way possible a spirit of independence and self-reliance amongst the people, by the adoption, amongst other things, of piece-work in preference to the debasing cooly driving system to prevent relief camps, or the works for incapables being made more attractive than able-bodied relief works. This may be done by insisting on much more rigid discipline, by confining the people to their camp, by devising a deterrent system of punishment for habitual deserters, &c., &c.

Ch III. Qn. 20.

Question 20.—Association of Civil Officer with Public Works Officer on Relief Work.

Under what circumstances should a Civil officer be associated with a Public Works Department officer in the management of a relief-work? What is the proper field of duties of the Civil officer? What parts of the duties should be wholly under him, and what parts should be entirely beyond his sphere? If it is proper for him in any way to interfere with or control the discipline of the labourers, the management of the camp and bazaar, the tasking, the measuring, and the payment of wages, state how this can best be done without undue friction and annoyance.

Punjab.—Opinions, where expressed, generally similar, but the civil officers seem hardly to have considered the question.

North-Western Provinces.—Generally similar.

Bengal.—Ditto.

Bombay.—10 answers. The majority hold that a civil officer should be associated with a P. W. D. officer on every large work, the former supplying the labourers whom the latter employs. That P. W. D. officer would have entire control of tasking, measuring, and paying. The civil officer would manage poor-houses, hospitals, and bazaars, pass

labourers on to the works, and transfer them from the P. W. D. to civil works or hospital. The two officers with the medical officer might join in ganging the applicants.

Madras.—25 European and 1 Native replies.

Opinion is not unanimous but a majority think that the civil officer should supply the labourers on works, and look after the bazaar, hospital, and perhaps payment, while the Public Works Department officer should undertake the tasking, measuring, and other professional functions.

Ch III Qs 20.

NORTH-WESTERN PROVINCES.

North-Western Provinces

Captain Marshall.—The discipline of the labourers, of the management of the camp and bazaar, and the sanitary arrangements, might be under the Civil officer; but the tasking, the measuring, and the payment of the wages should be exclusively under the control of the Public Works officer, acting of course under the instructions laid down by Government.

Mr. Colvin.—When numbers make the Department Public Works staff insufficient, or local difficulties arise, we have always used Civil officers when organising or administrative needs suggested it, as apart from mere departmental mustering, measurement, and payment. All this again depends on the men. But the broad line is—the Department Public Works officer for the work and the payment; the Civil officer for the accessary arrangements.

Mr. Sandys.—The Civil officer's duties in this district might be confined to seeing that a sufficient number of works were started to give employment to all who required it before they became too weak to perform any work; that proper arrangements were made for the shelter, in case of bad weather, of labourers who had not been hutted; that wholesome food was sold at fair rates by the shopkeepers of the bazaar, and that the bazaar was well supplied. The maintenance of discipline among the labourers, the management of the camp, the tasking, measuring, and payment of wages should on any work likely ever to be carried out in this district be left in the hands of the Public Works Department officers, as the Civil staff is never likely to be strong enough to undertake any of these duties at a time when their own ordinary duties are much heavier than usual.

Mr. Lawrence.—In all cases, if possible, a Civil officer should be associated with a Public Works officer in the management of relief works during the height and decline of a famine.

The admission and discharge of labourers, fixing the rate of wages with reference to prices, payment of wages, and grading the labourers according to their strength, should be left to the Civil officer. The Civil authorities should also be consulted regarding the work to be undertaken. All details in regard to the carrying out of the work, and the provisions of tools and plant, should be left to the Public Works Department. The preservation of discipline, the management of camp and bazaar, should be in the hand of the Public Works officials, who would receive all necessary aid from the civil officers. If the above division of duties be clearly laid down to start with, there need not be any friction.

Major Jeffreys.—His duties will be to exercise a general check and to bring to notice any abuses that may arise. Especially it would be his business to find out the causes of general and wholesale desertions—whether due to unusual severity in enforcing piece-work, or to mismanagement or to absence of real distress. The Commissioner would look to him for a full and complete explanation on all these points, and on his report a local committee should be appointed to make the investigation spoken of in my remarks on para. 19. He should have nothing to do with the technical part of the work, the control or discipline of the labourers, or the distribution of wages or task-money; but it would be his duty to inquire into all these points, to investigate the composition of the working parties, their caste and previous occupations, as such inquiries would throw much light on the ability or otherwise of the gangs to perform the allotted tasks.

It would be his business to record his opinions on these matters and to give his advice to the local Public Works officer. The camp and bazaar, however, would be his special province, and these should be entirely under him.

Captain Home, R.E.—I do not think that a Civil officer should be permanently associated with a Public Works officer in the management of a relief work, but at the commencement of a large relief work the presence of a Civil officer would be most desirable, and would strengthen the hands of the Public Works officer materially. His advice on many points in connection with the relief camp, would be most valuable, and his assistance would be needed in matters of police, conservancy, and supplies.

When the work has been fairly started, the civil officer should confine himself to periodical inspections; he should draw the attention of the Public Works officer to any defects which he may notice, and should arrange in consultation with that officer for their rectification.

Mr. Bathe.—The Civil officer should be the controlling head, and the engineer officer should work in immediate subordination to him with respect to all duties excepting engineering details. For the latter part of the engineer duties, he (the engineer) should be under the immediate control of higher engineering authority. By engineering details I mean the laying out of the works, and their thorough execution according to engineering principles. The tasking and paying should be subject to the control of the Civil officer; for I fully believe that there is positively a tendency to save Government money at the expense of the workpeople on the part of the engineer, in order to be able to furnish satisfactory "nakshás" or weekly returns of expenditure showing a minimum of expenditure for a maximum of work. The people are consequently dissatisfied. This is one of the principal parts of the administration which requires the scrutiny of the Civil local officer.

BENGAL.

Bengal.

Captain May.—I think it would be best to place the discipline of the labourers, management of the bazaar, and sanitary arrangements entirely under the civil officer, and the tasking, measuring, payment of wages, &c. entirely under the Public Works officer. Distinct rules like these is perhaps the best way of preventing friction and annoyance in cases where officers do not happen to hit it off.

Mr. Hart.—In all large works used as relief labour centres, and wherever there is a relief camp of (say) over one thousand inmates, a civil officer should be associated with the Public Works officers.

General Wilkins.—Civil officers should not be associated with Public Works officers in the management of relief-works. Such an organisation should be avoided. It is a bad plan to mix up officers of different departments in the performance of one and the same duty.

The duties of the civil officers are, when properly defined, onerous enough, and amply sufficient to engage all their attention and activity. They are in my view as follows:—

1st. To thoroughly investigate the condition of the people within the range of their authority. This can only be accomplished by district visitation.

2nd. To learn the numbers of families and the population of every village.

3rd. To become personally acquainted with every district official of the Civil Departments—Revenue, Judicial, Medical, and Police.

4th. To inaugurate the establishment of central poor-houses, and to supervise their management closely.

5th. To inaugurate the village relief works for the semi-able-bodied unable to leave their villages, and to supervise their management.

6th. To inaugurate and supervise central hospitals.

7th. To place village inspection on a sufficient basis, and to see that these most necessary inspections are regularly and efficiently performed.

8th. To investigate the circumstances of all seeking relief on relief works of all kinds. To grant passes to those who are able to work on public works, and their families. To send the less able-bodied to the village works.

9th. To investigate the cases of all wanderers and immigrants.

Mr. Propert.—This is a question concerning which I hold a very decided opinion. I consider that every extensive relief work should have its civil officer, and I would make that officer responsible for everything except mere labour, with which he should have nothing whatever to do. He should most certainly undertake the management of the camp and bazaar and the control of the labourers when not actually engaged in work. The tasking, measuring, and the payment of wages do not in my opinion concern the civil officer. I do not anticipate friction or annoyance, if a relief work be placed in general charge of a civil officer. The duties of a Public Works officer would be to carry out a certain project by means of labourers sent to him by the civil officer. He should treat these labourers as far as possible in the same manner as though they had come to the works from their own villages of their own free will. They would be under him and his subordinates during the hours of labour, and would be paid and fined, &c., as upon an ordinary public work in an ordinary season.

After work hours the Public Works officer should have nothing to do with the labourers, who would then revert to the authority of the civil officer.

Mr. Norman.—It is always advantageous that a civil officer should be associated with a Public Works officer in the management of a relief work. The proper field of a civil officer's duties is to pass applicants for work on to the works, to listen to and investigate all complaints, to supervise the poor-houses which should be attached to every large work for the support of the very old, cripples, &c., who may have relations on the works. He should not interfere with the control or discipline of the labourers, but if he consider that the task exacted is too high, he should bring the same to the notice of superior authority. He should narrowly watch the condition of the labourers, and if any appear to fall off in condition, they should be taken out of the regular gangs, and placed in special gangs where no task is exacted and the wages are less. Persons in a badly emaciated condition must be relieved of work altogether and specially treated. The management of the bazaar should be under the civil officer, who should also give his advice on all matters in connexion with the arrangement of the camp. He should also look after the hospital, issue of clothes, &c., and pay special attention to the condition of the children.

Mr. Spry.—I think that on every really large work there should be a civil officer associated with a Public Works officer. Their duties can and should be quite distinct, and there need be no friction. When applicants come, the two together should, with the assistance of the medical officer, sort them into able-bodied and less able-bodied. The Public Works officer would then assign to them their tasks, &c., and in fact would look after the labourers when on the work, and see to their payments, &c. The civil officer would on the other hand see to the labourers when not at work; he would look to the sanitary arrangements, the relief camp, the bazaar, the hospital, the treatment of the relatives, &c. of those on work who are unable to work, &c. Each officer in his own particular line would have quite enough to do. The civil officer can much better do what is assigned to him than the Public Works officer can, and *vice versâ*. Confusion and disorder have generally occurred when officers have gone beyond their proper sphere. It is only necessary to have clear and specific rules as to the duties of each. If friction then occurs, it will be the fault of individuals and not of the system.

Mr. Charles.—There should be a civil officer near every Public Works Department work. His duties should be confined to seeing that all who applied got work; to settling who were fit to go on Public Works Department works, who to civil works, and who poor-houses; to occasional inspections of the labourers. I do not think the civil officer should have anything to do with measurements, taking roll-calls of particular parties, or should interfere with the Public Works Department officer in any way unless he thought that the health of the labourers was unduly suffering. On the other hand, I think he should have full power to transfer labourers from civil to Public Works Department works, or *vice versâ*, and should also be listened to by the Public Works Department officer as to complaints made by villagers and others about the conduct of labourers or establishment, damage done to crops and fields, &c.

Mr. Moore.—On a reference to Government, it was decided that the *entire* management of large relief works should be under the Public Works Department officers, and this has been strictly carried out except as regards the grain supply. My idea is, that the entire arrangements should be under the civil authorities, and that the Public Works Department officers should attend merely to the execution of the work.

Mr. Percival.—Under no circumstances should a civil officer interfere in the management of a relief work under the Public Works Department. His duty is to see that people able to work and wanting work are sent to the right place and provided with food, if necessary, till they are handed over to the Public Works officer in charge of the work. The bazaar and the poor-house will be under him, but not the labourers nor their camp.

Colonel Anderson.—In all very large relief centres a civil officer should be associated with a Department Public Works officer. Professional duties should be entirely beyond his control or interference, but for all general management he should be responsible.

Mr. Robertson.—Whenever a work is a very large one, capable of employing upwards of 10,000 labourers, a civil officer ought to be associated with the Public Works officer on the work. The civil officer, in addition to his duties at the work, could take charge of a tract of country or circle of villages around the work.

As large bodies of applicants for work would naturally be attracted to the work, he could then receive and examine and give them passes of admission. He should, as often as possible, muster the people, note their condition, and report regarding it, remove all who have irregularly got on to the work, carry on the magisterial duties, see that the sanitary arrangements are such as they should be, and in fact carry on all work not connected with the professional duty of the Public Works officer.

Near all such works it is most advisable to have a relief camp for the infirm, aged, &c. This would be under the supervision of the civil officer, aided by a medical officer, and he should manage the bazaar. He must never interfere with the professional work, and the engineer should not interfere with the management of the camp, the discipline of the labourers, the payment of wages, or the tasking, except when he finds on examining the people in gangs that they are falling off in condition, and there are complaints of overtasking; then he should give the Public Works officer his opinion in writing, if he considers the task is affecting the condition of the people. He should on examining the people have authority to transfer any person from Public Works Department works, either to a Civil Agency work or to the relief camp.

I hold that there ought not to be any friction between any two such officers if they are devoted to their duty, and each refrains from interfering with the proper work of the other as detailed above. Should any friction arise, it can be soon settled by the Commissioner of the Division and the Superintending Engineer of the Circle.

Mr. Whiting.—I decidedly think that a civil officer should be in charge of every large relief work and be always there; if the work is not large enough, it is desirable that he should come as frequently as possible. He should look to the state of the people, put them on to the work; he should not give orders, though he may make suggestions as to classing and tasking, but should receive any complaints they make, and should act generally as the friend of the people. He should talk over with the engineer any case in which he thinks the people are overtasked, &c., and if they disagree, it should be referred to a doctor. But the civil officer should not give any orders on the work, or the engineer would become a cypher. On the Nira Canal this was the system pursued, and though there was a civil officer on the work, who could move the people about or dismiss them if he wished, about the work itself he gave no orders, but discussed all complaints with me and mentioned to me anything that he saw requiring alteration.

MADRAS.

Mr. Grose.—When a "smaller" work is so large that a civil officer need be attached separately to it, he should be supreme over the laborers when they are off work, and should supervise the payment. I see no need for friction. If the Department of Public Works officer and the civil officer disagree the matter can be referred at once to higher authority. A civil officer may also have to be attached to one of the larger works when it is very large. In this case it will generally be sufficient if he is a minor officer taking notice of grievances and bringing them to the notice of the superior department of Public Works officers. If the work is very large, a special magistrate may be necessary. The civil officer should never interfere with any of the Department of Public Works arrangements.

Mr. Longley.—I would not under any circumstances associate a civil officer with a Public Works Department officer in the management of a relief work, but civil officers should have the power of seeing that coolies are not overtaxed and are regularly paid, and that sanitation and food-supply are properly attended to.

Civil officers should be empowered to see that the coolies are not overtaxed and to desire Public Works Department and medical officers to revise the classification.

He should have nothing to do with measuring or payment of wages except to see that they *are* paid, and he should have the power of enforcing obedience to his orders in non-professional matters, the responsibility in case of opinions differing resting with him; but he should not be *associated with* the Public Works Department officer. He should be in all non-professional matters the superior of the Public Works officers. His decisions should be obeyed first, and appealed against, if necessary, afterwards; and, the responsibility being on his shoulders, he is not likely to go far astray.

Mr. Webster.—A civil officer should not be *associated* with an officer of the Public Works Department in the management of a relief work under any circumstances, as it would only lead to divided authority and confusion. It should be the duty of civil officers to send coolies to works, and direct their transfer from one class of gang to another, and also to arrange for bazaars if necessary, and there his executive duties should cease. The officers of the Department Public Works should work, task, and pay the laborers and should also hut them, and construct the camps if necessary, and should carry out the direction of the civil officer as to transferring coolies from one class of gang to another. They should also have the entire management of the arrangements for transferring coolies from one work to another. Should it, however come to the civil officer's notice that coolies are not paid regularly, or are not sufficiently tasked, it should be his duty to report the matter to the collector, who would bring it to the notice of the district engineer.

Mr. Price.—I consider that where there is a large relief work, a civil officer should always be associated with a Department of Public Works officer. I am of opinion that the civil officer should have the entire control of the taking on of applicants for relief and turning them off; that the entire regulation of camps and bazaars, and the arrangements for furnishing money, finding supplies, settling disputes, &c., should be in his hands. I would leave to the Department of Public Works officer completely the tasking, payment of coolies, measurement of work, and accounting. The construction of camps I would place also in his hands, but I would not leave the plan of it either to his fancy or that of the civil officer, but give a standard pattern upon which all camps should be constructed. In short, I would leave the management, &c., of the coolies when on the work in the hands of the Public Works Department, except as regards turning them

off and the management of them and their affairs, when actually off the work, to the civil officer. If this distinction be laid down, I do not see how men can very well quarrel. There will be quite enough for both to do.

Mr. H. T. Ross.—In this division relief works were conducted without any friction by an association of Public Works Department and civil management in which the duties were divided as follow: The civil officer decided what persons were eligible for admission to the work and handed them over to the Public Works officer, never interfering with them again in any way until after each day's work he was furnished with a nominal roll certified by the Public Works officer, whereupon he (the civil officer) disbursed the wages to the coolies during the following day (as described in paragraph 7) while the Public Works officer went on working those not actually being paid. The works being *nominally* under civil agency, the Public Works officer was saved the onerous duties of disbursing coin, keeping accounts, furnishing progress reports, and all sorts of returns, and the whole mass of famine correspondence. His time, which ought to be spent in the purely professional part of the management,—the tasking, measuring, discipline, execution, and supervision of work,—was not wasted in paying, accounting, and correspondence. It is, I believe, a fact that, in the present system obtaining on works in progress in this district (where the time of Public Works officers is largely taken up in the mechanical duties of disbursing coin), *daily* payments are never made; and I see from correspondence in the *Madras Mail* that several Public Works officers plead guilty to the miserable spectacle of disbursing wages up to 8 or 9 o'clock at night and thus keeping famine coolies hanging about for payment for hours after work is over.

Captain Awdry.—It would be convenient to have a civil and Public Works officer on every large work to superintend the admission of coolies and the arrangements for bazaars, camps, hospitals, and payments, &c.; during the working hours the coolies would in every way be under the Public Works officer and him only. There would be no friction if during working hours they were under one officer, and when off work under another.

Lieut.-Colonel Hasted.—It is much better not to associate a civil officer with a Department Public Works officer. European superintendence is very valuable, and two men going over the same ground is a waste of time. Let the Department Public Works men do the work, the civil officer the gratuitous relief, village relief, hospitals, &c.

Major Ross Thompson.—The setting out and measuring up of work, the distribution of laborers over the work, the rates at which the work should be executed (holding in view the current prices of the *necessaries* of life) and the payments of the laborers should rest solely with the officers of the Public Works Department. The management of the camp and bazaar, the inspection of the sheds, and of the food-supplies in the bazaars should rest solely with the civil officers.

MYSORE.

MYSORE.

Colonel Sankey.—The natural divisions of duties between the Public Works and Civil Officers, when associated in charge of a relief-camp, would apparently be for the former to assume all responsibility for setting out and measuring up work and making payments, while the latter takes the whole management of the camp and bazar; but in actual practice, where only a very subordinate Civil Officer may possibly be present, the Public Works Officer may find it necessary to look after everything himself, excepting the bazar, with which, I think, in any case he should have as little connection as possible. He should also, under all circumstances, have power to inspect and give his opinion on the sanitary arrangements of the camp, the character and price of the grain supplied in the bazar, &c., leaving it to the Civil Officer to act on his suggestion as he may consider desirable. If, again, the latter thinks a labourer is being too hardly tasked, he should in like manner bring it to notice; but action on such representation should be left entirely in the hands of the Public Works Officer. In a matter of this kind I have no doubt that there will be abundant experience derived from the facts of the late famine, which will enable the Commission to arrive at sound conclusions, and my opinion must therefore be taken only for what it is worth.

Major Scott Moncrieff.—The presence of a good civil relief officer is most valuable on large relief works, but it is a delicate one requiring tact and temper. The bringing people to the works, the receiving them, the classifying them, the arrangements of the camp bazaar and hospital are all his duties, and if besides this he is a magistrate, there will be petty cases of theft, &c. to be tried by him. It is no business of his to regulate the task, measure up work, or pay wages, but if he sees that any of these details are not being properly attended to, if he finds that fraud is being practised on Government, or that undue severity is being practised towards the cooly, he ought to point the matter out to the Public Works officer in charge and mention it in his official diary to his own superiors. There are Public Works officers who look on the presence of the civil officer at all as an insult. If they show it by their conduct and persist after being cautioned I do not hesitate to punish them severely and to remove them from all relief operations.

Mr. Ricketts.—If the Public Works Department officer is a competent man, I do not see why he should be interfered with or controlled by the civil officer (who will find ample work elsewhere). In the case of a subordinate alone, then the civil officer might exercise certain control. The civil officer should, however, visit such works from time to time to judge for himself of the physical appearance of the labourers and whether they are improving and the like. The labourers, too, may have something to represent to him, and he may be able to find out frauds, &c., but all that he does should mostly be in the way of suggestion to the Public Works Department officer, or it may be in representation to higher authority. If the civil officer has time at his disposal, it should be devoted chiefly, I think, to the management of the bazaar and the sanitary arrangements of the camp and people.

Colonel Johnson.—The proper field of duty for the civil officer, if by civil officer be meant revenue officer, is the inspection of villages, the general supervision of small works and relief camps, the drafting of people to the relief works, the prevention and punishment of wandering and desertion. He should never attempt to interfere with the control or discipline of labourers on a work.

QUESTION 21.—THE REGULAR EMPLOYMENT OF ORDINARY IN CONJUNCTION WITH RELIEF LABOUR.

Besides the persons to whom employment is given with the special object of affording them relief, the Public Works Department usually employs on the works it carries out a large number of both skilled and unskilled labourers, who are dependent for their regular livelihood on the receipt of wages more or less all through the year. State how the continued employment of these may best be made compatible with relief labour if the works on which this class of men is employed are closed or turned into relief-works.

Punjab.—Skilled labourers, such as masons and carpenters, may be employed on works at their trades or as gangers; at the height of the famine they must be treated as other labourers.

North-Western Provinces.—Similar to Punjab.

Bengal.—Ditto.

Bombay.—8 answers. Skilled labour may be employed on relief works as far as there is any demand for it. Beyond that it must be employed like other labour at the same rates.

Madras.—17 gentlemen (Europeans) have replied. The unskilled labourers may either be employed as gangsmen, or fall back into the ordinary famine labourers. The skilled labourers may be employed on the works at their own trades, or as gangsmen.

NORTH-WESTERN PROVINCES.

Captain Home.—The skilled labourers would be principally masons and carpenters; their numbers are not very large, and a certain number of masonry works would always be required in connexion with the relief works, on which they could find employment. Some of them might also be employed as mistris in supervision of relief works.

Mr. Lawrence.—In the case of skilled labourers who look to the Public Works Department for regular employment there will be no great difficulty. The number of such is not large, and even in relief works employment can be found for them. With regard to unskilled labourers they will, in the beginning of a famine, when piece-work is exacted, have an advantage over ordinary labourers. When the famine is at its height, they must take their place with the rank and file of relief labourers on subsistence rates.

Mr. Quinn.—These trained labourers are invaluable as gangers, and to do that portion of the work which requires practice, such as dressing earthworks, sloping and grassing the sides, &c.

BENGAL.

Captain May.—The skilled labourers employed, as a rule, are chiefly masons and carpenters. If masonry and timber bridges have to be constructed on any new road under construction as a relief work, it affords them employment, otherwise it is best to let them find employment for themselves on the relief works.

Mr. Metcalfe.—The skilled men may be aptly employed as supervisors or sirdars of gangs, as the sappers were employed in the Behar famine of 1874.

BOMBAY.

Mr. Hart.—Skilled labour had best be employed under a system of task or piece work at the lowest remunerative rates, to be fixed by the Public Works officer in charge of the work.

General Wilkins.—Artisans, smiths, carpenters, and masons are, as a class, accustomed to seek employment far away from their homes, where they cannot, of course, excepting in large towns, find any continuous employment. A large number of artisans doubtless left the famine districts for those more favoured, where they could obtain work at their own trades. A great number were, however, engaged on relief works, particularly smiths and carpenters, where their services were required for the preparation and repairs of tools, and for building huts, &c. The masons had little employment in their trade, but were engaged in supervising the work-people and their work as maistries and muccadums, for which duties they were well fitted. The artisans, when employed in the manner above indicated, received higher wages than the work-people.

Artisans of other trades unused to public works joined the mass of the people on relief works. They suffered much on account of their employment on work to which they were not accustomed; but allowance was made on this account in their task work.

No relief works were started for the special employment of artisans, excepting at the poor-houses, where work was provided for those too feeble to work on relief works.

Masonry works should be undertaken as relief works when combined with earthworks.

Mr. Propert.—The construction of mere lines of earthbank is in my opinion tantamount to throwing money away. I therefore earnestly recommended that in the case of all roads constructed by relief gangs, some provision be made for metal, culverts, and nullah crossings, otherwise at the termination of a famine the work done during its continuance will be found utterly useless for any practical purpose. If distress be severe, it will be found I think that even skilled labourers will be willing to accept reduced salaries rather than lose employment altogether. Skilled men must, even on famine works, receive more than mere labourers, and if their ordinary pay be reduced in the same proportion as that of the unskilled classes, it will be possible to retain their services, and thus secure something like "finish" in the project on hand.

Mr. Norman.—A certain number of skilled artisans, such as blacksmiths, stonemasons, carpenters, water carriers with bullocks, must be employed on every relief work of any size. These men must be paid according to the market value of their labour at the time. During the last famine the rates for skilled labour fell considerably. If skilled workmen apply for relief, and there is no demand for their special kind of labour, they must be taken on at the ordinary rates as labourers.

CH. III. QN. 21.

BOMBAY.

Mr. Spry.—When the necessity for famine relief comes, the regular workers in the Public Works Department must, I think, take their chance along with all others. I do not see why any exception should be made in their favour. Many of them, however, from their previous experience of the work of the Department, would probably make efficient gangsmen, measurers, &c.

Mr. Moore.—If the works on which these skilled labourers are employed are turned into relief works, they might still be kept on working at that part which requires their skill; but if such work is not continued, or if the entire work is closed, I do not see how they can be kept on.

Colonel Anderson.—The combined employment of skilled labour in conjunction with unskilled labour is essential to the due turning to account of the latter, and indeed provides useful work for much unskilled labour. The wages need not be on the standard of ordinary times if lower would be accepted, as would probably be the case in times of general pressure on all classes.

MADRAS.

MADRAS.

Mr. Webster.—In my opinion the wages of such persons not being artisans should be reduced to the famine wage rate as soon as it is determined to convert the work into a relief-work. They would suffer, it is true, but they would still earn enough to keep them in condition. They would be comparatively few in numbers, and I consider should not be exceptionally treated.

Mr. Price.—The Public Works Department, as a rule, does not employ skilled labor direct. The practice is that work requiring this is carried out by contract. I see no reason whatever why these works should not go on during a famine just as much as during ordinary times. A contractor will not take any more men than he requires. As regards unskilled laborers, the only persons who are permanently on employ are the "mile coolies" on roads, and these men I would keep on. They are not paid daily but monthly wages. If the works upon which they are employed are converted into relief works, I would employ them as head coolies. We were glad enough to get them during the famine.

Mr. Longley.—This question appears to me to answer itself. If the laborers, skilled and unskilled, referred to depend on the Public Works Department for employment in ordinary, *a fortiori* they will be so dependent in extraordinary, years of famine. The unskilled labor will be employed mostly on earthwork. The skilled labor, such as wudders, brick-makers, stone-cutters, masons, &c., will find employment on sluices, culverts, revetments, lime-burning, &c. There is no difficulty in finding them employment if only the cost needed for masonry works in connection with the earthworks is sanctioned, and to turn them adrift on the plea of making room for distressed labor would be simply to have them returned distressed and incapable of good work, when by retention and employment their condition might be kept up throughout.

Mr. Oldham.—Writing from experience only, the unskilled laborers sank into ordinary relief laborers. We were glad to get the skilled laborers as head coolies or gangsmen. If the latter were numerous and in gangs already I would employ them on piece-work at special rates.

Mr. Weekes.—I do not see that the class of men mentioned have any claims to be treated in any way different from the rest of Her Majesty's subjects, and would give them employment on full labor works.

Lieut.-Col. Prendergast.—Skilled labor can always be employed on those parts of a work where it is ordinarily required, although the work is one of relief. Smiths and carpenters have not found employment at their trades, because buildings have not been carried on upon the system of relief wages. In the case of irrigation works, bricklayers can be employed on the sluices and calingulahs, and wudders on the stone revetment work.

Mr. J. W. Rundall.—I think that the ordinary masonry works with such wood-work as is ordinarily required should be continued, and that this work should be carried on, on piece-work, as far as possible. During the recent famine scarcely any masonry work has been done, and you find, therefore, tanks without sluices or weirs, roads without culverts and channels without head works, as mementoes of last year's famine work. I refer to the Bellary District in this statement.

Captain Awdry.—The class of labor referred to can be employed in many ways; one would be as maistries, &c., to superintend ordinary famine laborers, but the most part of them would be wanted to follow their ordinary occupations, for if famine works are to be fully useful there are many masonry works which must be constructed in connection with them, and on those works the ordinary labor would be employed.

Major Ross Thompson.—On large works, such as railways, canals, &c., undertaken as famine relief-works, there are always numbers of works requiring skilled labor. To the sites of such works all skilled laborers should be conveyed and employed there. Seasons of famine press heavily on the skilled and half-skilled laborers as well as the unskilled; buildings and other works requiring skilled labor are, therefore, by no means unfitted for relief purposes.

MYSORE

MYSORE.

Colonel Sankey.—In reference to the employment of skilled labour, it had somehow been received almost as an axiom in the Mysore famine that this class required little or no provision to be made for its members. All works involving skilled labour were, at an early date in the distress, left uncommenced. The Government of India seemed also to be impressed with somewhat the same idea.* Yet it was undeniable that—(1) as a body, the skilled workers throughout the Province were involved in the same distress as all others, and, having little or no reserve funds to fall back on, were very nearly, if not indeed quite, as liable to die for want of the necessaries of life as the unskilled; (2) the works entered in the Public Works Budget, involving skilled labour, were all in the highest degree essential, and indeed emergent.

To show in a general way how fallacious was the impression that work involving skilled labour was unfitted for relief purposes, Captain Bowen, R.E., (Superintending Engineer for Roads and Buildings,)

* While the utmost solicitude was displayed for waifs and strays, and generally the thriftless members of society, the claims of the respectable, though equally distressed, cultivating ryot, skilled artisan, and willing able-bodied labourer did not apparently attract the needful attention.

at my request analysed the case of an ordinary building—a taluq cutcherry—and the results are given in his memorandum;* from which it will be seen that, of the total labour which could be employed on such a work—a small one, no doubt—only affording employment to 117 people for 250 days—the percentages of the different classes of labourers stood nearly as follows, in round numbers:—

		Per cent.
Skilled bricklayers, carpenters, smiths		7
Half-skilled sawyers and brick-moulders		4
Unskilled	Men coolies	22
	Women	67
		100

Although these percentages may not hold good for other buildings, I think it may with sufficient safety be assumed that, in all works of this nature, not much less than 80 per cent. of the work will be suitable for unskilled labour.

As regards the remaining 20 per cent. belonging to the artificers' class, who not only suffer in famine probably quite as much as others, and who especially of all other labourers deserve the fostering care of Government from their extreme usefulness to the community, it appears to me that, unless for exceptional reasons, buildings and Budget-works generally, involving the employment of skilled labour, should for their sake be carried on as in ordinary years, provided the needful supervision can be spared. In Mysore this could certainly be done, as works of this character are as a rule carried out under contract.

* Dated 1st September 1877.

Major Scott Moncrieff.—Skilled labourers if trustworthy can be employed as gangsmen, writers, police peons, &c. Unskilled labourers, if unequal to these posts, must work as ordinary coolies.

Miscellaneous.—If people begin to wander aimlessly about in large numbers, in spite of a good system of works for them to resort to, the roads should be daily patrolled by the police and these aimless wanderers made to give an account of themselves or sent to the nearest work. I emphatically protest, however, against their being sent back to their supposed village or district if there is no work there for them to go to. For they will only wander away again, and from my experience in Mysore I know they are as likely as not to give the wrong name of their village.

I think they should be prevented crowding into a town, and at once put upon works. But of course they will evade any sort of cordon that may be invented. Within the town beggars ought to be taken up daily and drafted by the police on to works. In short, I think whenever the poor have begun to leave their villages and their usual occupation to wander about or to beg, relief may be forced upon them, or in other words they may be made to find their only chance of a quiet undisturbed life is to go on relief works. For all this the police must be largely employed and much will depend on their integrity. They should be strengthened for the occasion by additional officers.

Colonel Johnson.—The continued employment of skilled labourers can usually be amply provided for on ordinary works selected for relief, and this should always be done.

QUESTION 22.—RELIEF WORK FOR ARTISANS, WEAVERS, &C.

Have you had experience of any kind of relief-work other than earthwork? If so, describe it. Has any attempt been made to employ artisans, such as weavers, smiths, carpenters, &c., in pursuing their own professions, and with what success? In the case of weaving or spinning, when raw material is given out, and thread or cloth received back, is it best to pay the difference of price between the raw and the worked-up material, or to pay daily wages to the workers? State your views as to the best method of distributing the raw material, and exacting a proper tale of work, and make any general suggestions on this subject that occur to you.

Punjab.—Cotton was given out to women to spin by agency or committees. Payment made for amount spun at about double bazaar rate.

North-Western Provinces.—Thread was given out to weavers, who received daily wages or cooked food.

Bengal.—Besides masons, carpenters, and blacksmiths employed on works, work was given to spinners and weavers. Cotton was weighed out, and the cloth made therefrom taken by weight, a payment being allowed calculated to give two annas for a day's work.

Bombay.—10 answers. Opinions and experience various. In some cases raw material was given out to weavers, and the difference of price between raw and manufactured material paid.

Madras.—13 European and 1 Native gentlemen have replied.

When weaving and spinning are resorted to for relief distribution of the raw material is considered preferable to money advances, but a small advance in corn for subsistence until the material is worked up, and the people receive the price of the cloth, is necessary. This is gradually adjusted as the work is brought in. Payment of daily wages in such cases is not expedient.

PUNJAB.

Mr. Coldstream.—During the recent scarcity a system of relief work for women in cotton spinning was organized, and carried out through the members of the municipal committee.

A certain sum was allotted to each member, and he purchased clean cotton and gave it out to spin to the poor women of his district or ward.

Wages were paid for the amount spun at about double the bazaar rate, as the relief was intended for the more respectable class of women, who could not from shame appear at the relief work. The plan was successful, and a considerable amount of relief was in this way afforded.

Ch. III. Qn. 22

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Mr. Lawrence.—I have had no experience of any kind of relief work other than earthworks, save on a small scale in poor-houses.

The case of city artisans, such as workers in gold and silver thread and wire (*bataiyás* and *dakaiyas*), weavers of silk and cloth, finer kinds of the (*kasbis and juláhás*), workers in embroidery (*sozan kars*), deserves more attention than it has hitherto received. These people are generally Muhammadans. They will not do earthwork, for which they are physically unfit, nor will they on any account allow their wives and children to come on the works. These people are to be numbered by thousands in Agra. These men have generally a wholesale dealer or firm through whom they trade. It might be practicable to make advances to them through this firm, to be repaid without interest at the end of the famine.

Mr. Whalley.—Yes; I have tried the experiment of employing weavers at their homes in their own art.

I have made advances for cotton thread through the Zemindars who selected the weavers to be employed, served out the threads and received the manufactured article.

I found that the difference in price between the raw and worked-up material at present rates was insufficient for the support of the artisans, and they were paid daily wages through the Zemindars.

The accounts are not yet cleared and the manufactures have not been sold, but by an estimate of the value of the latter at market rates the artisans appear to have earned three-fourths of their subsistence.

This is a better result than average earthwork.

Mr. Story.—In the Jhánsi poor-house in 1868–69 the weaver classes were employed in making cloth for the inmates of the building. Thread was issued out and a certain time allowed to weave the cloth required. The people took to it readily, much preferring to do work they were accustomed to to going to work on the roads and tanks. They received only cooked food exactly the same as the rest of the paupers. As an inducement to work well a little extra food, or a pice, was given to those who had worked hard and had exceeded their task within the specified time.

Bengal.

BENGAL.

Mr. Magrath.—I have mentioned the employment of spinners and weavers, and also that of blacksmiths; carpenters, and thatchers were employed in building golas, temporary offices, and timber bridges. Masons, of which we had but few, repaired broken masonry bridges and built a dàk bungalow, which was required. All the men were working at very slightly enhanced rates, and the work they did was all efficiently supervised and good.

I should not dream of paying daily wages to spinners and weavers. We weighed out cotton to the spinners and gave them so much for work by weight when it was brought back spun, making a slight allowance for wastage, and deducting for bad work.

The rates paid for work were calculated so that a person doing a good day's work received about two annas a day. In the case of beginners we gave a little more at first. The thread was handed over to the weavers by weight, and the cloth woven paid for again by weight, about 10 per cent. being deducted from the weight of the cloth owing to its being always damp from wetting the threads in weaving. Deduction was also made for bad work. The cloth of course has to be stored, as it does not command a ready sale in famine times, but is easily disposed of afterwards, and the poor-houses take a certain amount for the very ragged poor. I have already expressed my opinion that the raw material should be distributed by weight and work paid for by weight also. In places where much jute or hemp is grown, the people can be well employed in making bags, of which a vast quantity are always required. Again, amongst hills, quarrymen, stone-cutters, and stone-breakers can be employed in quarrying, dressing, and breaking stone, to be afterwards sold. Professional brick-makers can be making bricks for present and future consumption. In fact, if Government is not afraid of outlay recoverable by degrees, and possibly not entirely in full, it is possible to utilize very many artisans at their own trades.

Mr. Henry.—During the famine of 1874 in Tirhoot, whenever practicable, employment in their own professions was offered to artisans. In the villages forming part of my relief circle, but principally in the town of Durbhunga itself, considerable employment was given to three classes of artisans—dhooniyas (wool-bowers), spinners, weavers.

Government had sent up a large consignment of cotton. On inspection it was found to be of inferior quality and exceedingly dirty. The first thing we did was, by an experiment made in the presence of a responsible officer, to ascertain what amount of loss of weight resulted from the process of "bowing" and effectually cleaning a certain quantity of the cotton. We then weighed out the uncleaned cotton to the dhooniyas, explaining to them the amount of wastage we were prepared to allow. They brought back the cotton thoroughly cleaned, and after adjustment of weights, were paid in grain for their labour at certain fixed rates. I have been unable to see old returns and cannot give figures from memory. The cleaned cotton was then weighed into store. Employment was offered to women in need of it. For many of them we had to provide spinning wheels; this necessitated the employment of carpenters for a time.

Women wishing to work as spinners presented themselves at the cotton golahs and there received a supply of cotton to be spun into thread. The wastage allowed and the amount of grain wage to be given were fixed after experiment and inquiry. Good workmanship carried special rates.

The thread received was then entered in store and given out to weavers to be woven into cloth. Sufficient precautions were taken to protect ourselves against fraud. All the cloth so made was given out on indent for gratuitous distribution. In some few cases the quantity of thread or cloth returned by the spinners or weavers was below the limit we had fixed. In all such instances deficiency in weight had to be made good from wages.

Baboo Hari Mohun Chandra.—Besides earthwork, I used to employ Hindoo ladies in spinning thread, and Polia and Mahomedan women in making gunny-bags,—the latter to a very large extent. The women thus employed were all on charitable relief. The Mahomedan and Polia women were paid half a seer of rice and one pice each day, on condition of making one gunny-bag in a day. I used to give every morning one seer of raw jute to each woman, who, on the following morning, used to give me one sackcloth weighing one seer, when the daily rations, consisting of half a seer of rice and one pice each, were given.

BOMBAY.

General Wilkins.—The masonry works on a new line of ghat road twelve miles from Belgaum were executed simultaneously with the earthworks with the greatest advantage.

Mr. Propert.—As regards Khandesh the relief works were carried out as I have described in the last paragraph, and consequently are now of real practical use. The employment of artisans in pursuing their own professions was only tried to a very slight extent in my district, but in the town of Yeola, situated in the neighbouring district of Nassick, the weavers were, I believe, to a great extent employed at their own houses. The result will probably have been recorded by the Collector of Nasick.

Mr. Norman.—I have had no experience of any kind of relief works except earthwork. No attempt was made in this district to employ artisans at their own trades on relief principles. I am therefore unable to offer any opinion on the subject referred to in this question.

Mr. Spry.—At the beginning of the famine, smiths were employed in making tools, carpenters in making handles, and basket-makers baskets, and relief was thus successfully given to those classes.

To indigent weavers and spinners also raw material was given out, and on the cloth or thread being brought back, the difference of price between the raw and worked-up material was paid. This plan was better than paying daily wages; for by paying the difference of price a man and his family had an incentive to work, whereas with daily wages there would be an incentive to idleness without any possible check and the daily wages besides would lead to complications and frauds. The raw materials thus given out were only distributed to people of ascertained poverty.

Mr. Charles.—The only such experience I have had is in an attempt made to provide work for the Hubli weavers. Government gave an advance of Rs. 500 or so for materials, and a few of the poorest families of weavers were engaged to make the kind of coarse cloth used for tying up daftars. But I cannot say the experiment answered well. There were hundreds and perhaps thousands of other weavers just as deserving of assistance, and yet it was impossible to assist them, both because advances to the extent of perhaps a lac of rupees would have been necessary, and because no sale could have been found for the immense supply of cloth they would have made. The system pursued was to guarantee the price of the materials to the Saukar, who usually supplied the weavers with thread, and to pay the weaver a fixed price for the finished cloth, out of which he repaid the Saukar.

The price fixed was the price of ordinary years per yard, fixed after a calculation as to the sum that would remain to the weaver after repaying the advance, and the number of days it would take him to make a piece of the usual length.

Mr. Hamilton.—We attempted to employ weavers by giving them advances to purchase raw cotton, which they were to repay in instalments without interest. They did not purchase cotton, but spent the money, which had to be recovered from their securities.

Colonel Anderson.—On this point I only know that women were successfully employed in some of the relief works in Kaladgi in spinning. I have no particulars of the management noted down.

Mr. Robertson.—I have not been in charge of works.

I think cases may arise when it is necessary to help local trades, especially those of weavers. Other artisans will generally find sufficient employment (unless a famine is protracted over two or three years) to keep the wolf from the door. In the late famine such aid was given at Vita in Satara, at Yeola in Nasik, and at Sangamner in Ahmednagar.

Advances were made to the different weavers on security, the weavers entering into a bond to make over the worked-up material or repay the advance to Government.

As a rule the advances were repaid with fairness.

I think the better plan would be to give the raw material, taking it back when made up, and pay a fair market price for the value of the labour.

The system has been carried out to so small an extent that it is difficult to pass any opinion as to the best method of distributing the raw materials. I am afraid that any system introduced would prove unsatisfactory and lead to loss and peculation, and I prefer as far as possible to trust to out-door labour.

Mr. Bosanquet.—I have already stated how weavers were employed here. When work was finished they were allowed the difference between the cost of the raw material and the estimated value of the material when made up. This I consider to be the equitable and proper mode of payment. As in earthwork, so in this, value of work done should in my opinion be the only basis of payment.

CENTRAL PROVINCES.

Mr. Nicholls.—In these provinces smiths and carpenters are too few and too well-off to want relief; probably this is the case elsewhere. If they worked in connection with our relief works it would be on contract or on daily rates, quite separate from the relief gangs.

The poorer classes of weavers in the villages are all accustomed to field work for short periods in ordinary years; and therefore earth work suits them well enough.

At Murwarra I saw the infirm paupers in the poor-house employed, mostly for the sake of occupation, in spinning.

In Dinagepore, under my directions, much charitable relief was given to the women of poor but decent families in preparing cotton, in spinning cotton thread and jute yarn, and in weaving and making up cotton cloth, and especially gunny bags. If we had paid daily wages we should have been unable to get the work done without incessant worry. It appeared decidedly best at a slow remuneration as was possible, to arrange for the raw material being served out, and the manufactured thread, yarn, or cloth being brought back. I believe the people behaved quite honestly with the raw material, which was only served out to those for whom some respectable person gave some sort of a recommendation. The recipients could work as much or as little as they liked. The rates at which they were paid was considerably under the ordinary rates of such labour.

Mr. Longley.—Besides earthwork I have had experience of weaving and spinning.

No attempt has been made in Salem to employ artisans, such as smiths and carpenters. Weavers are very numerous (especially in the town and taluk of Salem). This class of people commenced to feel the distress very severely owing to the extraordinary dullness of the cloth market, so that State relief was administered to them by advancing materials for weaving cloths on payment of fixed wages, and more than 3,000 families of this class were thus relieved in the Salem taluk alone under the superintendence of a special officer. This relief, no doubt, kept large numbers of weavers and their families from leaving the district and seeking relief in other centres of weaving such as Tanjore. Seven lakhs was laid out on this form of relief, of which about two lakhs has already been recovered, but the cloths are likely to be on hand for some time yet; and, though the outlay has been large and the recovery by sale likely to be slow, the employment of these weavers on their own industry kept large numbers from wandering and from falling on to gratuitous relief and thereby becoming demoralised.

In the case of weaving and spinning neither the payment of the difference between the raw and the worked-up material, nor the payment of daily wages to the workers commends itself. A fixed price settled with reference to the description of the product is preferable for reasons stated *infra*.

My views are—

(1) A depôt must be established at the chief centre of industry with as many branch depôts as may be needed to facilitate the grant of relief by advances.

(2) A small establishment should be attached to each centre or branch depôt to keep accounts of advances of materials and delivery of products, with a sufficient inspecting staff to see that the advances are not misappropriated and to enforce delivery of products.

(3) Raw material only must be distributed, the system of money-payment being open to objection, inasmuch as it allows scope for misappropriating a portion of the advance and buying with the remainder an inferior quality of material. If *materials* are given out, there is less scope for such practices, with a greater certainty of the materials being utilised for the purpose for which they are advanced. The raw material should be purchased in quantities, and a sufficient stock kept in hand to meet the advances.

(4) With the raw material a sufficient sum to meet the incidental expenses in the preparation of the material and a small advance to support the workmen till the materials are worked up must be given.

(5) When the products are delivered, the wages, settled with reference to quality thereof, must be paid, deducting the advance already made, together with any fine that may have been imposed for bad workmanship, &c. I do not advocate the payment of either daily wages or the difference between the ordinary market-value of products of similar description and the value of the materials advanced *plus* the incidental charges; as in the former case a proper return in work for wages paid is not ensured, in addition to the contingency of Government having to pay more than the ordinary price of the product. In the latter case the ordinary market value of products changes so constantly according to the demand that it is difficult to fix such prices with certainty.

(6) The advances of materials must be renewed as often as the previous advance is worked up and a return made.

(7) The products received must be kept in store, all cloths received in branch depôts being transferred to the central depôt and disposed of as the market improves; if the products are kept too long, there is danger of deterioration and consequent heavy loss to Government.

Mr. Price.—The only case of employing artisans of which I have seen anything has been providing advances to weavers; these were made by giving material for a certain quantity of cloth and an advance calculated to support them during the time that, under ordinary circumstances, they would spend in weaving up the material. They then delivered the cloths to the appointed officer, received the usual value of the cloths *minus* a portion of their fresh advances, and a second supply of material, and so on, until finally all that they received in advance was the material, they subsisting on the sum represented by the difference between the value of the material and the ordinary market-price of the cloth brought in. This was the system in Cuddapah. Government, I believe, had planned that the money advance given in the first instance should be deducted from the price of the first set of cloths, but we found that this would not, in practice, work well, so we took the money back by instalments. I infinitely prefer the system which makes the artisan's living dependent upon his own industry, and which does not leave it optional with him to work or loiter as he sees fit, to paying him a daily rate. Besides this, payment of daily wages not only increases the opportunities for levying blackmail, but where a large number of persons is concerned, increases work and accounting.

The mode in which we worked in Cuddapah,—and it was one which was arranged after considerable consultation,—was that the weavers came into the head-quarters of the taluk or deputy tahsildar's division, and there, after the head man of the village or the head weaver certified to the respectability of the man, he received yarn, which we had previously purchased, calculated to make a certain number of cloths, generally from two to six. This could be very easily judged. With the yarn he had an advance for subsistence given him, calculated on the number of days within which, if he worked at the usual rate, he would have the cloths ready. He then went to his house and, at the end of the time fixed, if he did not appear with his cloths he was looked up, and he got no more money until he had finished the cloths. The work of distribution was carried out by a gumastah and an account actually with each weaver was kept. The system worked excellently, and out of considerable advances made we lost but a very small sum, and, to the best of my recollection, in the end sold our cloths at a profit.

Mr. Stokes.—Weavers were largely employed in this district. We have over Rupees 20,000 worth of cloths on hand which we find it very difficult to get rid of. The aid to the weavers was great and successful. The other artisans are not in such numbers and none needed aid.

Mr. Gillon.—In the case of weavers, it is specially desirable that they should be allowed to pursue their own profession. They are most useless on a relief-work; they have no aptitude and not sufficient strength, as a rule, for hard labor; while by working with the pick-axe and the spade, they lose that fineness of touch which is so essential to them as weavers. Moreover, the Government obtains no adequate return for its expenditure by employing them on relief-works, while they can be employed at a profit as weavers.

MYSORE.

Mr. Ricketts.—In the case of weaving and spinning, it is best to pay the difference of price between the raw and the worked-up material, together with a slight advance on the market rates, and not to pay daily wages to the workers. In weaving and spinning it is easy to give out the raw material and know what the exact tale of work should be.

It is questionable whether such attempts are advisable, inasmuch as it tends to overstock in famine time what may be termed a glutted market. The existing supply is then sufficient for an extremely limited demand, and as the demand improves, so will the supply keep pace in the ordinary operation of trade. To then gut the market with articles made up at a price beyond what private dealers can afford to pay, and perhaps to sell them at a lower rate than prevails in the market at the time, simply benefits a few persons for the time being, and then works them, and all of their profession harm afterwards by the stagnation of trade till the Government surplus is cleared off. At the same time it is to be observed that it is very difficult or impossible to relieve some persons except by such means, and the only remedy appears to be in creating an artificial demand for clothing by Government largely distributing it to cover the poor and for hospital use. In this respect the Mansion House Funds were a great boon, but those who got clothes often parted with them for a trifle, and probably to the more thrifty, who thus have a store which will prove detrimental to trade in cloths for a certain time to come. However, this Mansion House Fund distribution has so mended matters in promoting circulation of money that it is probable the anticipated harmful results will not arise, or only to a limited extent.

Relief works alone should not be the universal panacea for relieving distress. Other regular works, such as stone revetment to tanks, buildings, &c., necessarily give employment to wudders, carpenters, bricklayers, and maistries, &c., who otherwise would be in great distress. It is certain that the lives of many wudders and their families would have been saved if they had found suitable employment during the famine. It has been calculated that even in such a small work as the erection of a taluk cutcherry the total number of ordinary coolies that would be employed in the various works relating to such construction, independent of artizans, &c., would be no less than some 20,000. The more, therefore, regular works are pushed on in famine time, the larger the number of persons saved from starvation, as after all special relief works and camps do not anything like meet all actual requirements as regards giving livelihood to all who require it in all the different phases and ramifications of the labour market.

Colonel Johnson.—I have no experience of employing such people as weavers at their own handicraft, but smiths, bricklayers, carpenters, stonecutters, and wudders, and all such handicraftmen, can easily be provided with work, often on the relief works themselves.

SECTION 2.—GRATUITOUS RELIEF.

QUESTION 23.—THE POOR-HOUSE.

The commonest mode of administering gratuitous relief is through the poor-house. What is he proper situation for a poor-house so as to secure accessibility, discipline, space, water, and proximity to food-supply? Is an enclosure wall or fence necessary, and of what should it be made? What total area is desirable in proportion to the whole number of inmates? What shape and material are best for the huts, and what sleeping space (in superficial area) should be provided for each inmate? How may they best be arranged with a view to ventilation, &c.? How should the latrines be placed and managed? What is the maximum number you would accommodate in one poor-house? How should the inmates be separated and classed together, so as to provide for the requirements of caste, for the keeping of families together, and for the separation of the sexes in the case of persons who do not belong to families?

Replies not summarised.

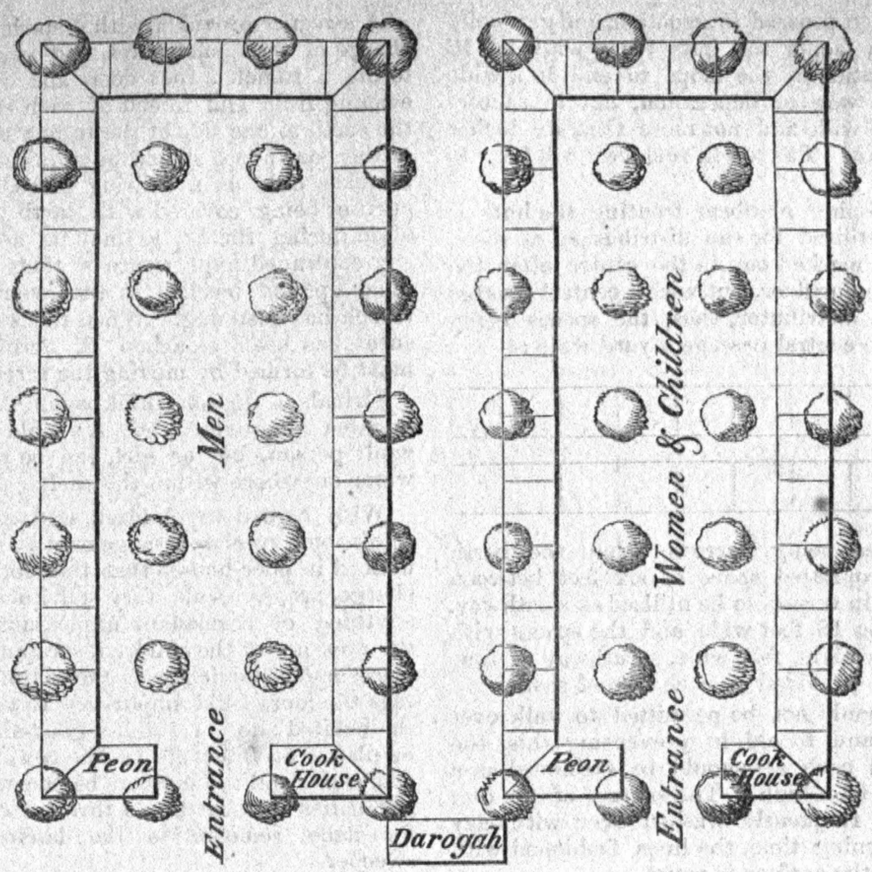
PUNJAB.

Muhammad Hayat Khan.—The first part of this question can be properly answered by the Medical Officers, but as far as possible Hindu and Muhammadans should be accommodated separately. The inmates of one family should be kept together, and those who do not belong to any family should be separately accommodated with regard to religion, sex, &c., *i.e.*, male Muhammadans and Hindus, and so the females of both classes, and the inmates of inferior classes, such as sweepers, domnás, &c.

NORTH-WESTERN PROVINCES.

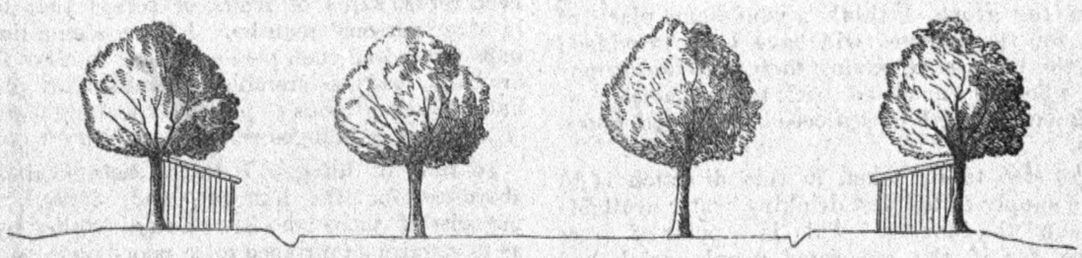
Dr. Loch.—A poor-house should be situated outside (say one or two miles) the head-quarters or subdivisional station. For the hot weather a not too closely planted, well-raised, and healthily surrounded grove should be selected; for the rains or cold weather an equally well-placed open spot is preferable. A grass enclosure wall should surround the whole area included; the area will vary so much in size, according to the nature of the ground, that I don't think any rules can be laid down for its size.

Huts with double sloping roofs placed on three sides of a square, the backs and ends closed with grass up to within a foot of the roof, that space being left open, ventilators should be placed as near as possible

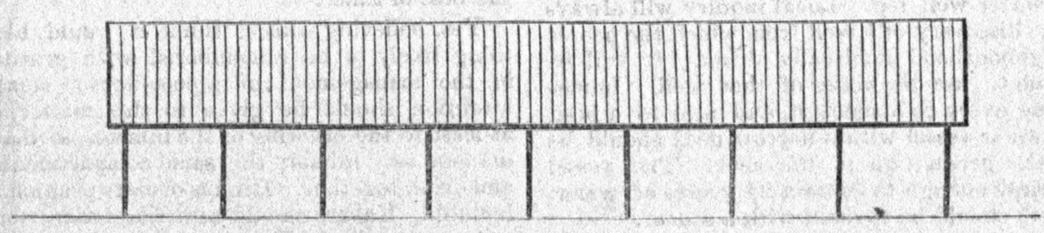


It will be seen that the arrangement consists of two enclosures—one for men, the other for women and children; the enclosures to be formed and bounded by huts after the manner of a sarai; the huts to run in line with the trees, by which the support of the huts will be greatly helped.

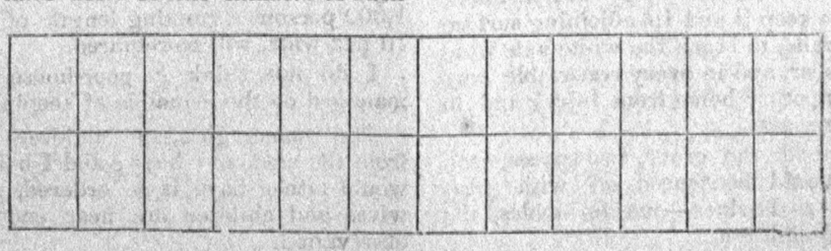
I think the best kinds of huts for this purpose are thin well-made thatches, open in front, and closed behind by a thin *tatti* or trellis filled in closely with long coarse grass; the thatch set up on *ballies* or poles thus, from end to end of the line of trees :—



showing a frontage thus :—

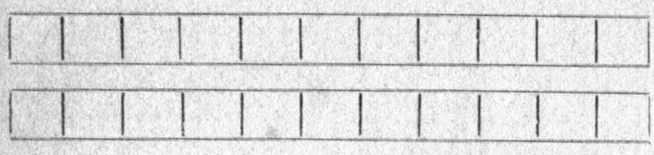


The long hut thus provided being divided by thin partition walls of grass into compartments, each to accommodate 24 persons. The floor of each compartment to be at least 10 feet wide and 36 feet long, so as to allow a floor space 3 feet wide and 5 feet long to each inmate. It would be better to have the floor 12 feet wide, so as to ensure a clear passage at all times down the centre of the hut, but then the thatch would have to be abnormally wide. And I think from what I have seen of the inmates of such poor-houses that a space five feet in length will suffice for they very seldom sleep extended. The thatches will of necessity have to be set up by skilled labourers, but the very first work of the paupers admitted should be to raise the floor of the huts with earth to a height of three or four inches above the general surface, to smooth the floor carefully and mark it out with deep lines into 24 equal spaces thus, each space to be the sleeping place of an inmate :—



They should then proceed to smoothen and gradually slope the surface facing the huts for a width of 16 feet; the termination of the slope to end in a wide shallow drainage way or depression, cut in saucer-shape three feet wide and not more than six inches deep in the centre. The earth removed will help to make the floors.

The slightly sloping platform fronting the huts is to be especially utilized for the distribution of diets, its surface being marked out in the centre after the manner of the sleeping floor, but with a central passage for the cook and distributor, thus, the spaces being 2½ feet square, the central passage a yard wide :—



The diet spaces being narrower than the berth places, an unappropriated space of six feet between each set will remain vacant, to be utilized as a pathway. The platform being 16 feet wide, and the spaces with their passage only eight feet wide, a pathway of four feet width may be provided on each side of them.

The inmates should not be permitted to walk over the diet spaces; and to aid in preventing this, the backs and ends of each set should be fashioned as a mud wall about a foot high. The surface of the diet spaces should be frequently washed over with clay water in the morning time, the lines fashioned with the fingers whilst the surface is moist.

So much of preparation having been effected, the inmates will proceed to provide a shallow drainage channel at the back of the huts, slightly raising and sloping intervening space of 4 feet. When this has been done, and adequate provision made against the possibility of the flooding of the grove after rainfall, by ensuring that the drainage lines end in land sloping away from the grove, I think a wholesome place of residence for the inmates will have been provided; and then the business of saving their lives and bringing those who are emaciated back to a condition of fair health and strength may proceed with good hopes of success.

The first step to be taken in this direction is to ensure the supply of the best drinking water available for the use of the inmates. This is a point of great importance, for if the emaciated people drink bad water they are not likely to recover their strength quickly, however well fed. Local inquiry will always result in the discovery of a well from which the people of the neighbourhood habitually drink. It will be generally safe to use the water of that well. Immediately facing every compartment, and near to a post, an earthen water vessel with a narrow neck should be sunk into the ground up to the neck. The vessel should be large enough to contain 24 quarts of water, and its mouth should be covered with a saucer.

Bhistis attached to the poor-house will fill the vessels every morning with water from the well selected as the source of water-supply, and the inmates will be required to drink that water only, dipping it with a tin vessel to be kept for that purpose, and to be hung by its handle on the adjoining post when not in use.

Another step of great importance in regard to the attainment of the object aimed at is the maintenance of a good conservancy. A condition of perfect surface cleanliness should rule everywhere in the grove and its precincts. The inmates of every compartment should be required to keep it and its adjoining surface clean, to repair its walls, to brush the white-ants from the posts if they appear, and in every reasonable way to protect their temporary home from injury and to preserve its wholesomeness.

About 50 yards outside the grove, two spaces, each 10 yards square, should be fenced off with grass screens and utilized as latrines—one for males, the other for females and children.

A sweeper provided with a spade must be placed in charge of these enclosures, and it should be his duty to dig a trench a foot deep and a foot wide every evening from end to end of each enclosure, throwing the earth to one side of the trench only. The inmates of the poor-house should be required to frequent these trenches only as a retiring place, the resulting impurities being covered with earth by the sweeper, as often during the day as may be necessary to prevent any continued unpleasantness there; the trench to be filled up and levelled in the evening after the new trench has been dug. When the surface of the enclosures has been trenched all across, new enclosures must be formed by moving the screens.

Urinals I do not think would be likely to be frequented if provided, but it should be ruled that no adult person, boy or girl, can be permitted to make water anywhere within the shelter of the grove.

With regard to children, and especially infants, I think some special arrangement is necessary. I have noticed in poor-houses that the mothers, or women in charge, are, as a rule, very solicitous about preventing anything of permanent unpleasantness arising from the presence of the children, scraping earth over moist places and removing with the aid of sticks or leaves or rags the more solid impurities to throw them behind the habited site. I think a good-sized basket should be placed at intervals in the centre of the women's enclosure, and the mothers be encouraged to mix such impurities with earth and throw them into the basket for daily removal to the latrine trench by the sweeper.

From what I know of the people who come or are sent to a poor-house, I do not think any difficulty is likely to arise by reason of caste or religious prejudices. Their previous distress has been too real to leave any considerable anxiety on that score upon their minds. In most cases they have eaten, from any person's hand, food prepared in any way, and not even refuse skins of fruits, or scraps that have been in other persons' mouths. I have seen a line of perhaps a hundred such persons eager to take food from my hand, ready to scramble for bread off my plate; have known such persons to pounce upon and devour skins of mangoes or oranges thrown out of a tent or house.

In time of hunger I think caste feelings are in abeyance for the hungry; and, indeed, the vast majority of those who are brought so low by distress as to require admittance to a poor-house are persons to whom caste observances are of little importance at the best of times.

Yet, believing this, I think it would be well, as a thing likely to be remembered with gratitude, that, in the management of a poor-house, something of attention should be given to this matter, extending at least to the ordering of the inmates, so that Muhammadans may inhabit the same compartments and eat and drink together. Hindus of caste position above and including Kahars should be in like manner encouraged to keep together. For the rest, caste may be allowed to manage itself without fear of trouble, provided always that mehters are lodged and fed apart, and that food is cooked and served out by Brahmans.

The maximum number of inmates in a poor-house should be 1,000 persons—men, women, boys, and girls. Infants or very small children, who sleep with the mother, not to be counted, excepting in the case of a mother with more than two children; the mother then to be counted as two persons and allowed two adjoining berth places. For the accommodation of 1,000 persons a running length of 500 yards of shed, 10 feet wide, will be required.

I do not think a poor-house can be properly managed on the principle of keeping families together.

The women, girls, and children must be separated from the men and boys; and I believe the husbands would rather have it so ordered, provided that their wives and children are near enough for occasional observation.

Mr. Metcalfe.—The administration of relief on a very large scale, through poorhouses, is unsuited to any but the poorest and lowest class of the community. No high caste person will, in my experience, partake of cooked food within the enclosure of a poor-house, even though that food be cooked by a Brahmin. I have the very strongest prejudice against poor-houses,* except for the class I have referred to in paragraph 11. The argument for their establishment is that it is a good test of proverty and that only persons really starving will accept food in a poor-house; but the persons who advance these arguments entirely overlook the fact that in famine times it is the class of respectable agriculturists who suffer as well as the professional beggar and the daily labourer, and it has always seemed to me a monstrous doctrine that the administration of relief should be accompanied by terms which are so humiliating to the starving family of the higher castes that its members prefer death to accepting the Government dole of charity.

The argument that liberal charity demoralizes the population is not borne out by the experiences of the Behar famine. It will be found that it is not the officers whose duties bring them face to face with the work of feeding a starving population who express fears of demoralizing persons, and who suggest all kinds of preventive measures against the bugbear of demoralization, but writers who draw their conclusions from theories. I respectfully offer my opinion that relief through a poor-house, *i.e.*, in an enclosure, in which at stated times cooked food is served out, although suited for beggars, lepers, worn-out prostitutes, and the very lowest castes, is wholly unsuited to meet the requirements of an extensive famine. Dharmsallas and the daily grant of doles are institutions well known in every part of India, but they are resorted to* by the most abject of the population; in other words, by those persons who, having no means of subsistence whatever, step by step have become more and more reduced during the period of their worldly declension and have become gradually habituated to the idea of receiving *bhik*.

To offer an agricultural labourer, reduced through the pressure of a famine, the prolongation of his life on the same terms on which the dregs of the population ordinarily live is to offer him terms which are most humiliating to him, and which he will probably reject. It may be that in some parts of India prejudices are less strong against this form of relief. My views are based on the popular feelings on this side of India.

As regards locating many thousands of distressed persons in pauper villages, conceive the expenditure necessary for the erection of huts over a whole province afflicted by famine, the waste of force in classifying a population into castes, in separating sexes, in billeting persons, in inquiring into applications for admission. All such arrangements signify large supervising establishments, *i.e.*, money. I ask which is best, that money should be spent in establishments or in food; in building houses, when persons have houses; in imposing conditions, when whole families are appealing for food. The questions stated in No. 25 are tantamount to enforcing the humiliation of poor-house relief on a starving population through legislative enactments. The whole of the suggestions contained in the questions from paragraphs 23 to 29 are in my opinion—(*a*) unsuitable to the circumstances of the country; (*b*) unnecessary on the grounds of being most economical to the State; (*c*) far more expensive than village relief; (*d*) equally demoralizing to the population if they become demoralized at all.

If it be asked if poor-houses are objectionable, how then (question 31) are the sick, the infirm, the cripples and bedridden folk, the orphans and deserted children, the wanderers without house or village, to be cared for? the answer is this—the sick, the infirm, the cripples, must be cared for in their own villages. The orphans and castaways should be sent to central nurseries, which should be placed under the charge of ladies, if any be available, with a native medical officer in attendance; and as for the castaways, temporary sheds near the civil officer's quarters are sufficient, the wanderers being employed in making baskets or in some other work. If it be asked—Describe the system then under which village relief can reach the classes referred to? the answer is—assume a tract of a famine-stricken country, famine-stricken in the sense that there exists no available food for the mass of the people. Divide that tract into circles, each containing from 50 to 200 villages under a Government officer. Subdivide the circle into village groups. Appoint a relief officer, a native, with a writer to each village group. Prepare lists of all able-bodied labourers, and separate lists for the sick and infirm. Village group officers report daily to the central officer the condition of the villagers. On receipt of orders they draft the able-bodied to works which have been designated in the orders, and place the sick and infirm on rations; granaries are formed at convenient places in charge of special officers who comply with indents from village group officers, and these granaries again are supplied from central granaries.

The village group officer's report informs the central officer of the state of each village, and, if necessary, of the state of each person every 24 hours. The circle officer has it then in his power to pass distinct orders regarding the population of each village in accordance with its special requirements. His medical staff are constantly on the move from village to village. He himself is daily in the saddle, going from village to village, or work to work. The result sought to be attained is to keep everything as much in its ordinary groove as possible. The able-bodied labourers are kept together in village gangs. Soon they save up a little grain and send their families back to their homes, themselves remaining on the works and supplying their families, thereby rendering organization the easier by reducing the numbers on the works. Relief can be stopped, modified, or extended systematically.

Now which is the better system—an orderly village organization, the population well under control, or a system of relief under which crowds pour on to works, necessitating the introduction of labour tests and every kind of inquiry, the construction of poor-houses and armies of pauper cooks, the formation of hospital camps for the sick and the infirm, and a general boulversement of all the ordinary conditions of life? What if a few poor sickly persons do sustain life for a few weeks without a labour test. Is it worth imperial consideration, for the sake of a principle, to disorganize the ordinary conditions of a province; to enforce humiliating conditions on a mass of helpless and starving persons?

Under this system little by little the able-bodied labourers have laid by a hoard of grain, and the sick and the infirm have also from their daily rations obtained a similar surplus store on which to sustain life till the next harvest is gathered; so that when the famine is declining and agricultural prospects are fair, the village being well under control, the circle officer by a simple purwanah orders the labouring gangs to be dissolved and sent back to their homes. The village group officer is ordered to suspend the issue of rations; the relieving staff still continuing at their posts for a few weeks more in case of any sudden drawback, and as soon as the district has reached its ordinary condition the establishments are withdrawn, the accounts closed, the circle officer's bungalow sold, and the famine operations concluded.

* I, of course, exclude those dharmsallas, such as Bod Gya, at other places on main lines of road traversed by pilgrims where rice, salt, flour, and pulses are served out to all who ask for it.

Mr. Kirkwood.—Gratuitous Relief.—I venture to concur in the opinion expressed by Sir John Strachey (1861), when writing of the Moradabad relief, that poor-houses, or kitchens, should not be opened extensively, but should be limited to the chief towns of a district where supervision is constant. But I do not concur in the opinion that in such a poor-house should be assembled all who may have no other means of support, and cannot be put on earthwork. In the Moradabad poor-house some 6,000 persons were assembled—men, women, and children forming, respectively, as nearly as possible one-third of the total. The majority of these it would, I conceive, have been better to relieve at their houses, either gratuitously or by such labour as the spinning and weaving reliefs. Nor am I able to concur in the somewhat harsh doctrine Sir John Strachey then adopted, that none should be relieved who refused to come to the poor-house—pardanashins alone, apparently, being excepted. But, perhaps, this doctrine had its origin in the peculiar circumstances of Moradabad, for it is reported that "while it is said that, in "some districts, the people of particular tribes have "preferred to die at their own houses rather than accept "the relief that has been held out to them, nothing of "this kind has been seen in Moradabad. The Goojurs, "of whom in particular this is reported to have been "the case, have suffered little in this district."

Huts were, I see, provided in Moradabad poor-house, and to each person was assigned a proper dwelling-place. Near each series of huts a space of ground was marked off with bamboos, and within it food was distributed. For each workshop also there was a separate enclosure. At the entrance to each enclosure was a board, showing the purpose to which it was devoted. A separate range of huts was provided for lepers. Sets of privies for each sort of people were provided near the main enclosure. The workhouse consisted of 13 sheds, besides two rope walks forming the sides of a quadrangle 700 feet long by 700 feet broad. Two sheds were allotted to spinning, three to string-making, one to storage of paper and string, one to *newar* rope and cloth-making, one to mat-making, one to storage of grain, and several sheds for the purpose of cleaning the grain. Hospital sheds and a roomy dispensary stood well aloof. The whole thing was situated on a spot, mostly waste land and mango tope, about 2,000 feet long by 1,500 feet broad.

These are arrangements which, if the necessity for a poor-house be admitted, recommend themselves strongly, the space and accommodation being varied according to numbers. I, however, demur altogether to the assembling of such numbers, and deem that almost all these persons should have been relieved in their homes, the poor-house being kept for those who had no homes or were fit subjects for medical treatment, and were unable to do any work except such as is comprised in the cleaning of the rice for their meals, or the occasional turning of a spinning-wheel. I am well aware that that theory is not in consonance with general practice.

In Orissa, in 1866, these cooked-food relief-houses were opened on every side, and formed through that year the great measure of relief. In March 1867 we still had on the cooked-food relief lists in Cuttack district above 32,000 persons. In 1866 the numbers had been larger. A new policy came into play in 1867, and by the end of May these numbers had been reduced to 10,000. After that they gradually fell off. In November 1873, Sir George Campbell, when preparing for the coming famine, wrote—"Meanwhile, "though as regards charitable relief we are not to "commence active operations, it is most necessary to "prepare all the necessary machinery for establishing "relief-houses," and he then proceeded to direct that district officers "must especially mark out the places "and sites at which the necessary sheds, godowns, and "other accommodation for relief-houses will be "required, if the scarcity should unhappily merge into "famine." In 1874, notwithstanding that the Governments of India and Bengal repeatedly recognized that it was most desirable to prevent the congregation of large masses of people away from their homes for the purposes of relief, this relief-house system was a very general method of affording relief. Arriving in the Bhagulpore district in March, I found that the system was being extensively introduced. Somewhere about 2,000 persons were then in receipt of cooked-food relief in hospitals and poor-houses (or relief centres). More poor-houses were to be opened. As soon as fresh organization for relief was started, I began to abolish this cooked-food relief. Within two months the numbers were reduced to 1,000, and by two months later fell to 500. The numbers thus relieved were kept at the lowest possible figure, and were mostly of the classes "homeless" and "undergoing medical treatment." But in some parts of Behar, I believe, the cooked-food system was in full swing.

Again, the system of poor-houses and cooked food was very extensively adopted in Madras and Bombay during 1877. In Madras, in the middle of May, there were 103,000 persons in relief-houses; at the end of May the number had increased to 116,000, and by the end of July to 207,000. Later on, I believe, the numbers rose still higher. In Mysore, at the end of April, the number gratuitously relieved at kitchens was 87,000, and was still increasing. In the present year (1878) this poor-house system of relief has also obtained in the North-Western Provinces. Some 24,000 persons were thus receiving relief by cooked food at the end of July.

At the same time (July 1878) more than half the 77,000 persons still gratuitously relieved in Madras were in poor-houses. These poor-houses each appear to have had several hundred occupants. Without the house-to-house and spinning and weaving relief systems, which I would advocate in supersession of poor-houses, there must be always great distress among multitudes who will only resort to the poor-house system of relief when it is almost too late to save life, and among still more who will not resort to it at all. Thus Dr. Harvey (on special duty with Sir Richard Temple) wrote at the end of March 1877—"The great majority of the people in the relief camps "at Madras itself were greatly emaciated and reduced, "and had evidently endured great suffering. Many of "the Madras people seen at my first visit were so far "reduced that death was inevitable. Most of these "poor people had not been employed on relief works "or been in receipt of relief until they arrived at the "camps. Occasional isolated cases of a similar nature "have been seen in almost every district." Here is another expression of opinion, this time by Sir George Campbell, in 1874, which points to the same conclusion. Sir George Campbell, in writing of the numerous emaciated children to be seen, stated—"The Lieutenant-"Governor has already explained the extreme difficulty "of saving such children, owing to the unwillingness "of the parents to bring them to our hospitals and poor-"houses. The mothers strongly resisted staying there, "in spite of every concession and arrangement that "could be made." Sir Richard Temple, writing on the 17th April 1877 of Salem, referred to the general orders of Government as being "to collect in large "camps all those destitute persons who could be col-"lected, and to sustain in their villages those who could "not be so collected." This is exactly the reverse of what I would advocate. I would say: "Sustain in "their villages all those destitute persons who have "homes and can be so sustained; collect into small "poor-houses and hospitals only those who have no "homes and cannot be so sustained." I think the orders of the Madras Government, issued at the end of August 1877, after some months of bitter experience, are more in accord with the correct course. They enjoined that "the ultimate object of these "relief camps, as receiving places only, for people here-"after to be drafted to works or to their homes, should "ever be kept in view." Also the Viceroy, in his Minute of the 31st August 1877, wrote:—"Such "(*i.e.* gratuitous) relief may be given in the shape of "grants-in-aid of private charity in the shape of cooked

" or uncooked food, distributed at relief centres, at " camps, or poor-houses where the recipients of relief " are housed and cared for ; or (if complete means of " supervision exist) in the shape of money alms dis- " tributed to paupers at their homes through village " agencies. One or other, often more than one, of " these forms of gratuitous relief must, sooner or later, " be dispensed in every famine tract. At large centres " of population relief camps are useful. for the inmates " are prevented from wandering about the streets and " starving for want of miscellaneous alms.

"On great roads and lines of traffic out-door relief " centres are more suitable. Where a good indigenous " village agency exists it is advisable to register and " relieve, at an early stage of a famine, the helpless " paupers in their villages, so that they may be pre- " vented from starving at home or from wandering forth " in quest of charity."

I look upon this latter declaration as a most important one. Under its influence I trust it may never in the future be said, as is now stated in the question before me, that the poor-house system is the "commonest mode of administering gratuitous relief." That it should be distinctly laid down that this system of house-to-house relief is to be initiated at an *early* stage of a famine is another great gain. It has been far too frequently urged that all operations connected with State gratuitous relief must be postponed until famine has reached an acute stage,—a doctrine which implies great disorganization, great waste, and great mortality.

Even if the poor house cooked-food system were as good in other respects as the home relief, gratuitously or by spinning and weaving employment (how very far short it falls of that standard I will not here pause to recite), it should be condemned on the score of expense, and therefore should only be had resort to on the score of necessity. In Cuttack (1867) at these poor-houses (including hospitals) the average cost per person relieved for a month was Rs. 2-7-8. This was inclusive of the cost of buildings and establishments. This figure was more than double what the spinning and weaving reliefs or the light labour (earthwork) relief cost us. In Bhagulpore (excluding cost of establishments) the average cost per mensem for persons relieved in hospitals and poor-houses was Rs. 2-4-4—a figure likewise double what any other relief cost. In Jhansi (1869) the average cost per mensem of persons thus relieved in poor-houses was Rs. 2-3. In Allahabad (1869) it was about Rs. 3-10.

If one point stands out more clearly than any other in the history of the famines of 1861, of 1866-67, of 1869, and of 1877, I think it is this—that cooked-food distribution in relief-houses is the most baneful, most demoralizing, most extravagant shape which relief operations can assume. It is not a test of vagrancy ; the idlest vagrants would always be those most ready to accept of relief in such a form ; but it is a test, and a ruinous one, of respectability, character, and independence of feeling. These must all vanish before it becomes accepted ; these it should at all times be the object of Government to foster; these, when preserved along with life, lead to a hundred economies, and, after the time of trial is over, bring out a population in no way debased. I do not think cooked-food relief is ever (as is stated in the Government of India Resolution of the 16th January 1877) "found a useful test of actual distress." Caste prejudice will preclude many of the most deserving applicants for relief from accepting it in this form. Cooked-food relief is, indeed, I think, devoid of a single good feature, and is excusable only when famine has unexpectedly reached such a height that people have already congregated in crowds so starving that they would eagerly devour the grain raw were it given to them in that state. Large relief-houses, with the concomitant of cooked food, can only be desirable when the immediate provision of shelter and the speediest way of conveying food into the bodies of the starving are the paramount requirements of the moment. Colonel Baird Smith was quite right when, in 1861, he wrote of "that mournful prostration so common among the helpless paupers of the relief-houses." The best managed of poor houses must, in a time of famine, teem with depressing sights and offensive smells. These sights and smells, and the demoralization of a life of indiscriminate crowding together of persons of both sexes, are incidental to all poor-houses. The only way to in any way obviate them is to give the people small huts to live in, instead of huddling them together in large common sheds. Greater privacy and diminished risk of demoralization would thus be secured at a cost but insignificant when compared with the result at stake. I would also substitute raw food for cooked food wherever such centralised relief may be necessary, except in hospitals. As to the huts, their number would be diminished in proportion to the early appreciation of the approaching calamity. For if the calamity be anticipated the mass of the people might be kept at home and their houses repaired for them, or they provided with money to do so. The expense that would be entailed in thus repairing their habitations would be trifling compared with the cost of providing them with shelter elsewhere, and the expense of feeding them in their homes would be infinitely less than that of feeding them elsewhere. This village relief, providing the neediest with support in their homes by a distribution to them near their homes of cash or grain, is, in my belief, the best form of gratuitous relief. I think the results of this village relief in Cuttack (1867) and in Bhagulpore (1874), although in neither place was it in every case administered faultlessly, are of a nature to warrant my regarding that as a primary canon of relief administration. Relief is thus offered in an acceptable form; the cost is much less, for the people in their homes make their supplies go twice as far ; and, if there are trustworthy and efficient distributors, the cheating and waste inseparable from centralised relief and cooked-food distribution will be avoided. But, in any extreme famine, it is certain that some will become homeless, both from their eagerness to hasten where they suppose food to be more available, and also from being ejected by those members of their families with whom they have hitherto lived, but whose narrowed means have now compelled them to regard self-preservation as the first object. For these persons, then, I would have, in certain localities 10 to 20 miles apart, according to the severity of the famine, villages built—small first of all, and increasing in size if the people flock in —just as in the case of the labour gangs.

Mr. Macdonnell.—I believe that in a system of relief in India a poor-house should play a subordinate position. It should be a refuge—a temporary refuge, and nothing more—where wandering mendicants and similar famishing waifs and strays should be harboured until arrangements could be made to send them to their former homes.

In opposing in this decided manner the poor-house system of relief administration in India, I shall possibly be exceptional; but I confess I am strongly prejudiced against that system by the experience of it I have had. I believe it to be ill-adapted to the circumstances of the country. It is certainly opposed to the feelings of the people, rich and poor, in whom the belief is almost inbred that residence in a poor-house destroys caste as well as all feelings of self-respect. I shall probably be told that this is a delusion ; that rules are enforced for the segregation of castes; and that labour is exacted, no doubt, with a view of preserving in the inmates some vestige of self-respect.

All this is true; but as far as poor-house labour is concerned, I still venture to say that as an attempt to maintain a self-reliant spirit in the inmates, or as a means of recouping the cost of their maintenance, it is practically worthless. While, as far as the observance of the best-framed rules goes, I believe the object in view, namely, the preservation of the caste status of the inmates, is never secured.

The poor-house system is admittedly inadequate to

Ch. III Qs 23.

BENGAL.

meet all the wants which gratuitous charity must relieve. Cases most deserving of help—respectable families reduced to want—are never helped by it. Every one at all acquainted with famine relief work must have met many instances where death was preferable to life on in-door relief terms. You must, then, if you adopt the poor-house system, of necessity have the other system existing side by side with it. Constant difficulties will crop up when you strive to draw the line between the sphere of action of each system. This of course is not an insuperable objection; but it is an inconvenience.

The only substantial argument on which, it seems to me, the poor-house system is based is the argument of economy. But if out-door relief were carefully administered, this argument ought to lose much of its force. The only extra cost which, under the system I advocate, must be incurred, and which is not incidental to the other system, is the cost of efficient supervision over the people in their villages. This extra expense would, I believe, be made up for by the benefits which the healthier system of relief would confer on its recipients.

In fine, the system of out-door relief is in keeping with that policy of retaining people near their homes, and of preserving the continuity of village life, which should be, in my belief, the central principle of famine policy—a principle which should be observed as closely as the state of the finances will permit. The poor-house system, on the other hand, seems an adjunct to the plan of drawing people away from their homes to large works—a plan which, in my belief, unduly concentrates attention on immediate economy. That does not seem to me to be a wise policy which, as long as human life is not absolutely lost through starvation, ignores the questions of subsequent pauperism and disorganised social conditions. It seems a more far-sighted policy to prefer a less grudging expenditure with the view to securing afterwards the immediate resumption by the people, impoverished no doubt, but not disorganised, scattered, or disheartened, of their usual wealth-producing avocations.

BOMBAY.

BOMBAY.

Mr. Hewlett.—Poor-houses should be established at the zillah station where there is a civil surgeon, and at large towns where there are dispensaries, and at other points where necessary: for example, at villages along the principal lines of communication leading into the district; but each principal poor-house requires an accessory hospital. I have already recommended a relief kitchen to be established at every large work. The poor-house should always be enclosed, and by a bauble bramble fence, if possible.

At Sholapur relief-house, kitchen or poor-house I had four grass sheds, of the dimensions given in the sketch, viz., 100 feet × 20 feet, erected for 200 inmates. (*See Diagram.*)

The latrines in this instance, as the ground was not suited for trenches, consisted of rows of earthen vessels, and a sweeper was kept constantly in attendance.

The men were placed in two of the huts, and the women and children in the other two.

The arrangement of the huts must depend on the space available, but there should only be one entrance to the enclosure, and if the number of applicants is very large, only the worst cases should be admitted for shelter. A large number of poor artisans who have their own houses, and strangers who find shelter in the dharamsalas of the town, can attend as externs for food, which they should eat within the enclosure, but all should be provided with tickets with distinctive colours:—

Red, to signify that the holder is to be fed once a day.

Blue, to signify that the holder is to be fed twice a day.

Yellow, to signify that the holder is to be fed three times a day.

This point requires the careful supervision of the medical officer, especially in the case of infants and children. The children and infants of externs should also be admitted within the enclosure and fed separately from their parents, this precaution being necessary, or else the parents will eat the children's allowance of food.

All infants and children living in the premises should be under the care and supervision of a *dhal* for the same reason.

Mr. Norman.—A poor-house should be erected within easy distance of a large town, where supplies can, without difficulty, be procured. The site should be somewhat elevated, with a good supply of water at hand. In this district it has not been found necessary to enclose the poor-houses, and the expenditure necessary to enclose so large a space sufficiently would be very heavy.

I think 4,000 or 5,000 persons might, with ease, be accommodated in one poor-house, provided the site were sufficiently spacious and the water supply good. The higher castes should be separated from the lower. Families should not be separated. People coming from the same village or district should be placed as much as possible together. Single women must be placed in separate huts. Nurseries should be established for orphan children, who should be taken care of by the older women. These arrangements can easily be carried out when the poor-house consists of a number of separate huts, as is the case under the Bombay system.

Mr. Spry.—If all the conditions are obtainable, the proper situation for a poor-house would be about a couple of miles from the town which is the head-quarters of a district or taluka, and on the banks of a running stream. If a grove of trees can be found all the better, but it is best that the surrounding country should be open, so as to admit of air and to prevent nuisances being committed behind the hedges, &c. Open country besides admits of expansion.

If a poor-house is at the distance I recommend from the town, there is no need for any general enclosure; the people are not likely to try and wander much to the town, and those that do can easily be relegated back. I did not myself adopt a general enclosure, as being inconvenient and shutting out ventilation. But there should be enclosures round the hospitals, the leper sheds, the cook and store rooms, and, above all, the feeding places. Posts and rails, with babool thorn branches affixed thickly along them, are the most effectual and easily run up. I cannot give any actual area that is desirable, only that there should be plenty of space between all the sheds. I do not recommend separate huts for families; the inmates of poor-houses are prone to filthiness in the extreme, and separate huts only impede conservancy. Long sheds with thatched roofs, and mud or rough stone walls going partly up to the roofs, so as to allow of a free current of air, are preferable. The latrines should be placed at a moderate distance off and away from the water supply. They should be tended by a special staff of sweepers and labourers and be on the dry-earth principle, fresh trenches being dug as old ones become utilized. Two thousand I think is the maximum number which can be properly looked after in one poor-house. Separate sheds might be kept for low caste paupers, as also for males and females not coming with families. For the rest I would let the people settle themselves down in the sheds, only preventing overcrowding. Too much petty interference only causes irritation and does no good.

Colonel Anderson.—Ordinarily it was found in Bombay in the last famine that the lower castes, who have few scruples, and children who at all times and especially in times of need are less tied by caste bonds than their elders, were the principal occupants of relief-houses. The able-bodied and adults remained at home or went on relief works.

MADRAS.

Mr. Price.—The proper position for a poor-house is from a mile to two miles outside of a town.

INSTRUCTIONS FOR FORMING RELIEF CAMPS.

In selecting a site, it is necessary that it should be high and open and with an ample supply of water for drinking and bathing purposes. There should be facilities for drainage, and the neighbourhood of native villages should be avoided.

The camp should, in the case of a first class (to contain 500), be within a rectangular enclosure, measuring 250 × 250 yards, which should be surrounded by a trench 5 × 5 feet. This trench should be lined at the bottom with prickly-pear, or thorns where pear is not available, and the spoil bank put back and sloped, a berm of 3 feet being left and also covered with pear or thorns. Second-class camps should be half the size of the above.

The ground within the enclosure should be levelled, and all brushwood, loose stones, and thorns removed. If there are any trees, the lower branches should be lopped.

Huts to accommodate 500 should be provided in a first-class camp and to hold 250 in a second. The size of each hut should be 75 × 14 feet. The side walls should be composed of 3 feet tatties, leaving an open space of 1 foot between the top of the wall and eave. The tatties should be plastered with a mixture of equal parts of cow-dung and sand, on the inner side, over which there should be a coat of whitewash, which should be applied once a week. The centre posts should be 11 feet above the ground, and 9 feet apart. The roof should be of bamboo rafters placed 3 feet apart, with thin bamboos between and bamboo reapers placed across, and the whole covered with either palmyra leaves or mats placed twofold. Where mats are used for roofing, outside ties of split bamboo should be placed along the whole length and securely fastened to the rafters inside. Similar ties should be put at intervals down the roof.

There will be ten of these huts exclusive of observation and hospital sheds placed in *echelon* 75 feet apart, and they will face east so that the prevailing winds may have free passage through them.

The flooring of each hut should be raised 9 inches or 1 foot and should be well tamped, and a thin layer of about half an inch of fine sand should be laid on top. Three small bamboo baskets of open trellis work containing charcoal should be suspended from the roof of each hut.

Surface drains should run along the sides of the huts, leading to the trenches, and the latter should have outlets to carry away the rain water. The earth dug out of these drains should be piled up against the walls of the huts so as to prevent the wind sweeping over the floor of the hut with violence.

The cost of each hut should not exceed Rupees 1-8-0 per head.

The latrines should be in three trenches each 30 × 1 × ¾ feet joined together so as to form a triangle, and should be well provided with dry earth, which each person should be made to use, and which should be stored in a shed in the open space in the centre of the triangle formed by the three trenches. The night soil should be daily removed and buried in deep pits.

The latrines should be enclosed by a wall of tatties.

The hospital shed should be of the same size as the others, but higher, and the roof should be thatched.

There should be two sheds, one for males and the other for females. The flooring should be raised and well covered with light sand.

The cholera and small-pox sheds should be built outside the camp, and their positions must be a matter of careful consideration. The size of each shed should be 14 × 12. The flooring should be raised and the roof of double matting. They should be surrounded by a trench fenced with thorns or prickly-pear, and guarded by an entrance gate which should be kept locked.

The size of the cooking-shed should be 75 × 15 feet, with palmyra leaves or thatch roof. The cooking ovens should be placed in double rows along the centre of the hut, leaving sufficient space on either side for the cooks to work.

These buildings will be on either side of the entrance of the camp, each measuring 35 × 14 feet, with a raised floor and thatched roof. The front portion of the store-shed will be occupied by the police as a guard-room, and in like manner the front portion of the superintendent's quarters will be the office.

It may be necessary to build quarters for the medical attendant, and in that case a suitable site should be selected not far from the camp: a hut 20 × 14 feet will be ample.

Dr. Gray.—A *poor-house* should be situated if possible with the following advantages:—

(*a*) In as central a position as possible in a taluk or district;
(*b*) in a Kusba village the head-quarters of a deputy collector or tahsildar;
(*c*) it should be out of or next a village, *i.e.*, on the outskirts;
(*d*) near a canal or well or tank;
(*e*) near a railway station or on a grand trunk road.

The total area of the camp for 2,000 inmates should be 255,000 square feet.

Fence or Wall.—This is essentially necessary. The fence should consist of a trench 4 feet deep and 4 feet wide with a hedge of thorns on the outer side of the trench. The best thorns for the hedge are the *prickly-pear.* In the Chingleput District camps there were no trenches round the camp. The fences were therefore exceedingly defective. In the Peapali poor-house, Kurnool District, I find this system of trench and thorns exceedingly effectual in preventing people from escaping.

The shape and material of the sheds should be the same as that recommended for a working-camp hospital. Each inmate should have eighteen square feet of space. The arrangement of the sheds should be something like what I have recommended for a working-camp.

The latrines should be placed to leeward of the camp. They should be divided into *male* and *female*, and the same arrangements should be made as those proposed for a working-camp. Between the male and female latrines there should be a hut for the storing up of dry earth. One corner of the latrine should be paved with slabs of slate or granite where the paupers might cleanse themselves after defæcation.

Qn. III. Qn. 24.

QUESTION 24.—CONDITIONS OF ADMISSION TO POOR-HOUSE RELIEF.

What should be the conditions of admission to relief in a poor-house? The usual conditions are (1) *inability to work on a relief work;* (2) *willingness to reside within the enclosure;* (3) *willingness to accept cooked food. Under what, if any, circumstances may these be relaxed, or may the food be distributed without residence, or may uncooked food be given? What arrangements should be made for the admission of applicants, and to whom should the duty of selection be assigned?*

Punjab.—Conditions stated are approved. Uncooked food might be given to those who can cook it in the poor-house.

North-Western Provinces.—The conditions stated in the question are on the whole approved, but there is an inclination to relax the condition as to cooked food to meet objections on account of caste, one officer would add vaccination. Poor-houses to be managed by committees, which should regulate admissions.

Bengal.—The conditions stated in the question are generally approved, but cooked food is objected to by some officers.

Bombay.—Inability to work and acceptance of cooked food essential. Residence within enclosure advisable, but not always feasible.

Punjab.

PUNJAB.

Mr. Nicholl.—The condition of admission stated should not be relaxed. Uncooked food might be given to those only who are able to cook it themselves *within the poor-house.* The duty of selection should be assigned to a Government official, or a respectable citizen.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—I can suggest no other than the three usual conditions, which should not be relaxed in any poor-house supported entirely by Government.

In towns in which the inhabitants raise subscriptions among themselves an equivalent should be given from Government and also from the municipal fund if there is one, and the sum thus raised might be expended in giving, without requiring residence in a poor-house, a small dole of uncooked food to any applicants belonging to the town or neighbourhood who might be considered to be deserving of such by a committee to be formed from the respectable residents of the town.

Applicants for admission to any poor-house should be passed by members of a poor-house committee, which should consist of as many European and Native gentlemen, official and non-official, as are willing to serve, as the larger the number the less irksome is the duty. During the hot weather and rains no applicants should be admitted who had not appeared in front of the entrance of the poor-house before 8 A.M. In the winter 9 A.M. might be fixed as the hour after which no applicant would be passed.

Any member of the committee or the superintendent of the poor-house should have power to order the admission at any time of any applicant whose case appeared to any of them sufficiently serious as not to admit of delay. Such an applicant should be duly passed by the committee on the following day.

Mr. Story.—Under all circumstances residence within the enclosure for at least 24 hours must be compulsory. I would not in cases of high-caste men insist upon their willingness to accept cooked food. Men of this class might be told off to assist in the cooking as a condition of getting uncooked food. Even if the little they were able to do was merely nominal it would be something towards earning a livelihood. If the famine was severe, admissions to the poor-house should be allowed at least twice a day, say 10 A.M. and 5 P.M.; exceptions to this rule allowed only in cases where the applicants were in a state of extreme exhaustion from want of food. Cases of this kind should be admitted at once and placed in a hospital under the charge of the native doctor. The committee of management of a poor-house should consist of at least eight or ten visitors, European and Native. It should be the duty of the visitors to undertake the admission of the applicants. None to be admitted without their permission, except in the special cases above referred to.

Mr. Stoker.—I would add two conditions to those specified in the question, viz.—

(1.) Vaccination of every applicant who had not been already vaccinated or had small-pox.

(2.) Segregation of the sexes.

The first will, I think, commend itself without any remark.

For the latter there are two reasons. It is a condition which will facilitate discipline and order, and at the same time render the poor-house less attractive, and these are the two points to be kept most prominently in view in imposing conditions of admission. The poor-house is not designed as a place of residence for people who have other means of support, but prefer a more dignified or comfortable maintenance at the hands of the State. And this is a precaution which would help to keep such people away. It is therefore worthy of adoption.

Mr. Lumsden.—Applicants should be examined every morning by the Civil Surgeon or Assistant Surgeon and passed on to the poor-house or sent on relief works.

Applicants arriving at the poor-house after the hours fixed for admission should be allowed to remain in an enclosure outside the poor-house until next morning, and any applicant in absolute want of food should get the usual ration; but no applicant should be brought on the poor-house register or admitted inside the poor-house proper except he has been passed on by Civil Surgeon or Assistant Surgeon.

BENGAL.

Mr. Toynbee.—I would only retain the three conditions laid down in Question 24 in the case of very severe and widespread famine. If really trustworthy officers were available, and in sufficient numbers, I would supplement poor-house relief by a weekly distribution of uncooked food to those whose circumstances and position were such as to make them prefer death by starvation to the loss of caste and its consequences, which resort to the poor-house would involve. The mode to be pursued would be that adopted in Pooree district in 1867, and called "village relief," and described in the answer to Question 30 (see also Mr. Geddes' compilation, pages 201–208). The admission of applicants would, in the first instance, be made by the Darogah, Superintendent, Mohurir, or other officer in immediate charge of the poor-house. He would be guided by the conditions mentioned in Question 24, and by the physical appearance of the applicants, whose names should be entered in a register to be kept for the purpose. His judgment and honesty would be checked as often as possible by the relief officers of superior grades.

Mr. Marindin.—In my experience of famine relief in the Durbhunga district in 1874–75, poor-houses were principally provided for persons who had wandered from their homes, and either from extreme age, extreme youth, or debility, were unable to work on relief works. When practicable, such persons were sent on as soon as possible to their homes to be relieved in their villages. There was a native doctor in charge of the poor-houses in the circle under my charge who was competent to decide in the first instance if the applicant should be admitted to the poor-house or sent on to the works. Residence and the acceptance of cooked food by the inmates were insisted upon as a rule, the exception being in case of children in arms, whose mothers could and did work. When persons were found upon the works in an extreme state of debility, they were sent to the poor-house till they recovered strength. Women with especially emaciated children in arms were allowed to take them to the poor-house in the morning, before going to work, for some extra nourishment like sago and milk.

Mr. Kirkwood.—Although I fully admit that the circumstances which beset us in Orissa in 1866—the sudden recognition of a great calamity only when its crisis was reached, and the absolute deficiency of grain at our disposal—may be held as a justification for applying such a rough-and-ready test as cooked food to all those applicants for relief who could not afford to purchase at the scanty stores of grain we offered for sale, and also to justify a system of relief-houses which did not render residence compulsory, and where no test for admission to the meal was enforced beyond that afforded by emaciation and readiness to partake of the food offered, I cannot think that when, as now-a-days must be the case, a famine is foreseen, any such justification would exist. Generally, under such circumstances as those described by the Orissa Famine Commissioners, no tests for admission to relief can be appropriately applied; certainly not those of residence or of cooked food. But, if the supply of grain at the disposal of the afflicted district is absolutely inadequate, even by the most careful economy, to maintain the lives of the population, and an extreme stage of distress has been reached unawares, then, perhaps, until further supplies are made available and some establishments have been organized, the test of cooked food may be justifiable But I do not think that residence should under any ordinary circumstances be dispensed with, or cooked food be insisted on; for I look on these poor-houses (or relief villages) as things that should be designed solely for the reception of homeless wanderers. Moreover, I think that the opinion that cooked food is the means of giving gratuitous relief least liable to abuse is not supported by facts, and that, while noting that cooked food is a method of relief common in native charities, it would be well to bear in mind the degraded sort of people on whom that charity is in ordinary times bestowed, and the very much higher grades of social life which stand in need of gratuitous aid in time of a famine.

BOMBAY.

Mr. Hewlett.—If there is a very large number of indigent people requiring food, it is in my opinion impracticable to provide shelter for all. As mentioned in the last paragraph, many of the artisan class whose occupation is temporarily in abeyance require food, but can get shelter in the town, and strangers can be largely accommodated in dharamsalas, but the worst cases, who cannot walk to the poor-house, should be admitted into sheds erected for them. I would make the acceptance of cooked food the condition of getting relief. All persons sent in from villages or picked up by the police, or who voluntarily come, should be received. On the visit of the medical officer these should be divided into classes: so many to go to the relief hospital, so many to be sent to the relief camp, and so many to be admitted into the poor-house until fit to go to the relief camp. This was the plan recommended at Sholapur. If the number of applicants at the poor-house will admit of the arrangement, I think all should be hutted inside the enclosure; and if there is no relief work near to which they could be sent, I think those able to work should be employed at such work as the improvement of the sanitary surroundings of the relief house and of the village or town, in planting clumps of trees, in filling in hollows, and levelling, either up or down, places requiring it, in cutting prickly-pear, in generally useful works to improve the neighbourhood, such as road making, deepening a tank, &c.; for others, not able to perform such work, cotton-spinning, rope-making, weaving, whilst others could be engaged in the service of the kitchen as cooks, or in grinding corn, in fetching water and wood, in washing clothes, in conservancy of the enclosure, &c. The non-workers would consist of the infirm, blind, crippled, and very old or very young. Some of these should be employed in taking care of children, &c.

Mr. Norman.—In my experience it has not been found necessary to relax any of the conditions mentioned except in the case of the very old and helpless who could not be moved to a poor-house and therefore had to be relieved in their own villages. In such cases, uncooked food had occasionally to be given, because arrangements could not be made at the smaller villages for cooking it. In future, however, I am of opinion that persons unable to move should be carried to the nearest poor-house and compelled to reside there. The acceptance of cooked food is most distasteful to the higher castes, but by no other means can the numbers on gratuitous relief be kept within bounds. To the superintendent of the poor-house must be assigned the duty of admitting applicants. They should be inspected every morning and at once classified. The able-bodied, if in need of food, must be fed and sent off to a relief work at once, arrangements being made for feeding them at certain fixed stations *en route*. This was done during the last famine. A few able-bodied men and women must be retained to do the work of the camp, and they should receive a slightly larger ration than the other inmates.

CH. III QN. 24.

BOMBAY.

Mr. Spry.—Inability to work on a relief work should be a *sine quâ non* for admission into a relief-house. If enclosures sufficient to accommodate all the people properly can be made, residence may be insisted on, but to erect sufficient enclosures in extreme famine would be tantamount to erecting several fresh towns and villages. Willingness to accept cooked food should be certainly insisted on under any circumstances. Morning and evening at an appointed spot, say the gate of the relief-house, the civil officer or manager of the relief-house should select out of the applicants those entitled to admission. If there is a Relief Committee, one or more members might also attend by rotation.

Mr. Symonds.—The ration in the relief-houses was in my opinion quite sufficient. At first we had open relief-houses as centres of circles of ten villages or so, without the condition of residence. Later on we had enclosed camps, which were much less satisfactory. At the small open relief-houses the people used to live in the central village and receive cooked food, which cost hardly anything more than the cost of the raw grain. They were under the patel, kulkarni, and village inspector. Those whom we could not move were relieved in their villages; the rest were sent, either on foot, or in carts if they could not walk, to the central relief-house. They would have much preferred to be in their villages, and it would have cost less to relieve them there, but then we should have lost the advantage of weeding them. Sometimes when a man had come his twelve miles to the central relief-house and satisfied us that he was really in want, we sent him back to his own village, knowing he would be happier there. It would be quite impossible to administer village relief without such a test, relying only on the patels and kulkarnis; we should be flooded with crowds of people who would be glad to get relief at home, but would not go any distance for it. At the present moment thousands of people would gladly accept village relief, and the patels would put them on it if left to themselves.

MADRAS.

MADRAS.

Mr. Price.—I do not know of any other qualifications than those named. They cover everything excepting, perhaps, dangerous emaciation, the existence of which necessitates one of two courses, viz., taking the individual into the poor-house whether willing or unwilling, or leaving him or her to die. I would not relax the conditions, excepting in the case of persons who have wandered a distance from home, or have straggled when bodies of coolies are marching, &c., and are finding their way back to their residences and cannot get employment. I do not approve of the distribution of cooked food without residence, or of uncooked food. Theoretically it may look possible, but practically it gives rise to so much fraud that such a step is unadvisable. If people choose to wander, they must, in my opinion, take what the State offers, and this in the case of poor-houses was, during the famine, good shelter, good food, and medical help, subject only to such rules and restrictions as were necessary in order to carry out sanitation and discipline.

The arrangements for admission in the Cuddapah District were that the superintendent and medical officer saw applicants who came to the camp and decided upon those to be received, and that all persons sent by the police, village magistrates, tahsildars, and relief officers were taken in. Where the relief officer looks properly after his superintendents they can be safely trusted.

Mr. Longley.—There are two classes of admittants—those voluntarily seeking it and those sent into camp as the only means of saving life. The conditions of admission should be those stated in the question, and will only affect the former class of admittants, the latter having no choice in the matter.

The first *two* conditions named in the question should, under no circumstances, be relaxed, but there may be exceptional cases where it is found desirable to give uncooked food. As a rule, however, the conditions should be enforced.

Applicants should be admitted at all hours of the day by the camp master who should reside at or in close proximity to the camp. The duty of selection should be assigned to the medical officer in charge of the camp.

Mr. Crole.—The only exception made is in regard to accepting cooked food. Paupers of the Brahmin and Veiesya castes receive the ration raw, and are allowed to prepare it themselves. Residence is never dispensed with. The rule could not be relaxed in this respect. It is a never-failing test.

MYSORE.

MYSORE.

Mr. Ricketts.—Gratuitous Relief.—The conditions of admission to relief in a poor house may be relaxed in the case of parents with large, and it may be weakly families; also where a family could struggle on if one or more weakly or perhaps useless members were helped, and without which aid the whole family as having to support said members must succumb ere long. Caste prejudices also prevent many persons entering a poorhouse on pain of being put out of caste, *i.e.*, social degradation, and worse in several cases to the sufferers than death. Again, many of the more respectable classes and gosha women prefer starvation to going to a poorhouse. In all such well-inquired-into cases raw food should be given without residence. If the poorhouse be of such a nature that due and feeling provision is made for caste and families, then this relaxation of condition of residence would only be exceptional, but more frequent where poorhouse inmates were more indiscrimately provided for. Applicants for admission should be looked to three times a day, or even oftener when necessary, by the superintendent, and his action should be supervised by the civil officers, *i.e.*, amildar, special relief officer, or assistant or deputy commissioner.

QUESTION 25.—COMPULSORY DETENTION IN POOR-HOUSE.

Under what circumstances does it appear desirable that entry into a poor-house should be made compulsory on persons who appear to be starving or to be in such a state of want as to show that relief in some form is essential to the preservation of their lives? and under what circumstances would you allow them the discretion of refusing to submit to this? If compulsion is used to take them in, what steps are required to ensure their stopping there? How should such a rule be applied to vagrants, and how to persons on relief-works, or seeking relief otherwise? Does it appear necessary or expedient to obtain legislative authority for such action as may be desirable in these respects? If so, suggest what seems most suitable. Would there be any special objections to such legislation, having in view the risk of exciting fears in the population, or for other reasons?

Punjab.—Starving people should be taken to the poor-house. Legislation not necessary.

North-Western Provinces.—Some officers are for compulsion in case of unprovided wanderers and beggars, others against it, and some approve of legislation, others disapprove.

Bengal.—Entrance into a poor-house may be made compulsory on wanderers and beggars, but not on respectable poor. The opinion is against legislation.

Bombay.—All vagrants and manifestly starving people should be compelled to go to poor-houses, and legislation on the subject is desirable.

PUNJAB.

Mr. Nicholl.—A person in a starving condition should be taken to the poor-house, unless some friend or relation came forward and engaged to support him; but once in the poor-house, he should not be allowed to leave till restored to strength; then he might be allowed to leave for a relief work, or discharged and allowed to shift for himself. It is a very easy matter to keep a starving man in an enclosure. With healthy vagrants and persons on relief works or mendicants the matter is different; these it is difficult to keep on works if they are inclined to leave. I do not think, however, that legislation is necessary.

NORTH-WESTERN PROVINCES.

Mr. Colvin.—I would allow no discretion to a starving incapable man of refusing poor-house relief, unless of the middle or upper classes. I treat all such as criminal lunatics, and bring them in by force. Once in, it requires force to eject them. Yes, I would certainly have legislative authority for the purpose. I see no risk or fear. All that is necessary is a discretion to the magistrate of the district to issue orders for the sending in of this class of people when in danger of starvation, if they belong to the labouring classes.

Vikar Ali Beg.—Starving people are always willing to be admitted into a poor-house, and for preservation of lives the police and tahsildars throughout the district should be ordered to send all such persons. It is not necessary to obtain legislative authority on this point, because I have seen, both in this district and Gorakhpur, that starving people consider it a great blessing to be admitted in our poor-houses, and if the poor-house was constructed as described in para. 23, there is very little or no fear of desertion, provided that one or two watchmen are employed in each direction.

Mr. Sandys.—All persons found wandering about and begging, as well as those who had come to the relief works and were too weak or young to perform even a light task (except in the case of very young children whose parents or relations were employed on the work, they should be sent to nurseries which should be opened at each work), should be compelled to go to a poor-house unless they agree to return at once to their homes, or if they consented to do so and did not go. A sufficient number of chaukidars must be entertained to ensure that those persons compelled to go to the poor-house, as well as the other inmates, remain there.

It is expedient that magistrates should have legislative authority to compel the persons mentioned above to go to a poor-house. A short Act might be passed authorising the Lieutenant-Governor to invest all magistrates with compulsory powers as soon as it was necessary to start a poor-house in any district. By such legislation there would be no risk of exciting the fear of the population of this district.

Persons in want who do not leave their villages should not be compelled to go to a poor-house unless they refused to obtain relief at the nearest relief camps. When the number of such becomes large, a system of village relief will have to be organized.

Mr. Kennedy.—It does not appear to me desirable under any circumstances to make residence in a poor-house compulsory. The paupers resident in a poor-house are practically demoralized, being rejected as outcasts by their neighbours, having cast off all sense of respectability or shame, demoralized by want of food, and the mental imbecility which attends starvation, and learning in the poor-house to disregard all ties of family; it is not desirable that persons should be compelled to enter such a place. In one case I directed a girl who had attempted to drown herself on account of hunger to be sent to the poor-house, but I can sympathise with the request made by her blind father and her miserable mother that she might be spared the indignity. It was for a long time believed in the district that all the inmates of a poor-house were to be first made Christians, and then transported beyond the seas. Even after this idea was dispelled, the mass of professional mendicants preferred their own independence with the prospect of starvation. There does not appear to me any object in compelling this class to enter the poor-house, and even if they were compelled to enter, it would be impossible to keep them there; thus the two classes of habitual mendicants and of respectable persons reduced to destitution are both unfit objects for compulsion. It would shock native morality less, and would perhaps be more feasible, to oblige mendicants to labour on the relief works. The only case, however, in which I should regard such a measure as allowable would be when the number of mendicants was so great that their presence began to demoralize the well-to-do population. The present method pursued in this district is to avoid compulsion and to open wards in the dispensaries for the worst cases.

II.III Qn.25.

North-Western Provinces.

Mr. Wall.—If compulsion be necessary for vagrants and others, which I doubt, there is I think no need whatever for legislation. Legislation would be a matter of delicacy, and a mistake altogether. I would use compulsion if necessary. A strolling beggar is not likely to bring an action for false confinement. Such confinement would not be looked upon as a hardship by the mass of the people. You would have public opinion on your side, even though you transgressed strict law. One ill effect of such legislation would be that it might be the beginning of a poor-law system—a matter to be shunned, not courted.

Mr. Lumsden.—I would certainly in famine times make entry into a poor-house compulsory in the case of anyone found in a manifestly starving condition, without any means of subsistence and unable to earn it on Government relief works. There seems to me to be no alternative. Government *cannot* undertake to provide the means of subsistence to starving people *scattered all over the face of the country.* Such people *must* be concentrated at convenient centres, relief camps, or poor-houses, to economise time, establishment, and cost of distributing relief. It is futile for Government to attempt to give relief to the starving poor at their homes in their villages. If Government is not prepared to make entering the poor-house compulsory in such cases as I have alluded to, it must be prepared to see many starve and die. I am distinctly of opinion that poor-house relief should only be given to non-residents in the case of indigent *parda-nashin* women, and perhaps a select few indigent native gentlemen in reduced circumstances.

I don't think legislative authority necessary; such legislation might have an unsettling effect on the native mind. It would be much better by an executive order to give the necessary authority to the local officers whenever the emergency arise.

Bengal.

BENGAL.

Mr. Barlow.—I have, in my answer to Question 7, Chapter II., stated what, in my opinion, is the special field for "poor-houses," so called. I think it would be an unnecessary hardship to shut up every person in an essentially starving state in one of these places. I look to the establishment of "relief centres," which grant out-door relief, to preserve the lives of reduced persons, other than vagrants, and restore them to a condition when they may be drafted upon works. A multitude would be thus provided for who would probably resist going into the poor-house, and by so doing might provoke complications.

From relief administered to respectable persons in their homes by means of house-to-house visitation, down to relief centres and poor-houses, embraces a wide field; and taking into account also various kinds of relief works, it may fairly be said that no applicant could present himself for whom the relieving officer could not provide a means of relief that would be free from reasonable objection as regards the individual's circumstance and condition. The question asked seems to imply this point. If persons urgently need relief, but will not accept it upon the terms or in the form in which it is offered to them, as being suited to their case, what is to happen? Are they to be allowed to exercise their discretion of refusing, with the probable result that they will die? I think the answer to this view must be given in the affirmative. The burden which the State undertakes when it offers relief upon reasonable terms to all who will accept it is almost unmanageable. To recognize the principle that people may demand relief upon their own terms would make it unsupportable. It is probable that the latter plan might tend in the end to dissolve the whole system of relief by reason of the demoralization of the people, as well as the inability of the State resources to bear extravagance and waste. The only distinction as regards applying the rule of compulsion to vagrants that occurs to me is the possibility that in the times of distress large bodies of these people congregated in towns might refuse relief, and by plying their trade of begging become a public nuisance. I do not think experience shows that there is any great risk of such a state of affairs really happening. Government officers would be active to prevent it. The public would certainly support their efforts, and vagrants as a rule are found willing to accept relief. There seems to be no necessity for legislation on the subject.

Mr. Hodgkinson.—Professional beggars and vagrants who appear to be starving should be made to enter the poor-house whether they like it or not. As a rule they are too willing to resort to it; few will require watching to keep them there. Members of the lower castes may also be similarly treated in extreme cases, and invariably when abandoned by their friends. The real difficulty is with paupers of the respectable classes, who will not apply for relief in any stage; they must be sought for and relief brought to them. To force such persons, particularly females, to a poor-house would be simply to ensure the death of many of them. There are also many who come to relief works who of themselves would decline the poor-house, although physically unfit for work and requiring attention and nursing. The objection would be often removed if a complete distinction was made between a poor-house and a hospital. It would be often easy, with very little compulsion, to induce a person to go and remain gladly in a hospital who would shrink and take the first opportunity of escaping from the poor-house. Legislation is unnecessary. In trying times the law must be relaxed, and it is on the whole far better to leave it to the discretion of the officers responsible for the completeness of the relief to decide how far compulsion may be used, than by legislation to lay down hard and fast rules which cannot possibly be suitable to the whole of the country, or review all the possible circumstances which may arise.

Mr. Toynbee.—I would only make entry into a poor-house compulsory in the case of starving persons found wandering about the country, away from their homes. If the poor-houses already established were managed with due regard to caste prejudices, as far as such regard could reasonably be shown without pampering the inmates, no vagrant found in a weak or starving condition could have any reasonable ground of refusal to go to them. At first I would make each case of refusal a subject of special inquiry and orders. If such cases began to increase I should take it as a sign of the increase of distress, and should conclude that the time was come for the introduction, as far as possible, of the village relief mentioned in the answer to the previous question, with a view of keeping people of the better classes at their homes, and of preventing overcrowding at the poor-houses. It would be extremely difficult, if not impossible, to compel such persons to remain at any poor-house against their will. Either the enclosures would have to be very large or a large and separate watch and ward establishment would have to be kept up. In Pooree, in 1867, it was found quite impossible to check the wandering habits of paupers. The only form of compulsion practicable would be for relief officers and the police to take to the nearest poor-house every person found wandering about begging or otherwise seeking relief and incapable of labour. Legislative action is not, as far as my experience goes, necessary. Compulsion beyond the point indicated above, and forced detention in a poor-house, if it were practicable, would, in my opinion, be unnecessary, as tending to alarm the people and to carry State interference beyond a point justified by any

circumstances that ever have arisen or are likely to arise. It would lead to the utter demoralization of the people, and the financial ruin of the Government, if the distressed classes were to be allowed to dictate, or to appear in any way to dictate, the form of relief to be given to them.

Mr. Marindin.—When poor-houses are only established for the reception of wandering beggars unfit for work I do not think compulsion would ever be required to induce persons to accept relief at them. I never remember any such case. To keep them inside the poor-house until it was thought proper to let them go might require compulsion in some cases, but any such person refusing to remain might be legitimately treated as a vagrant, and dealt with as such by the nearest magistrate.

Compulsion upon the people generally should not be resorted to unless their refusal injuriously affects the rest of the public. For instance, a large number of persons begging about among the relief camps would tend to throw the burden of supporting them upon persons who might barely be able to support themselves, or to introduce sickness into the camp, or expose it to thefts. I should deal with such persons as vagrants, and offer them the choice of accepting relief in the poor-house or being sent to prison. This seems a matter with which the local authorities are competent to deal under the law as it exists without special legislation.

Supposing, however, poor-houses to be the only channel of gratuitous relief, should the starving population unfit to work be compelled to enter them? I think not; under the existing law it would be illegal. If special legislation were resorted to, circumstances might arise in which it would be very difficult, if not impossible, for the local authorities to put the law in force. The measure would seem a tyrannical one to many who, from feelings of self-respect or other motives, had held back from entering the poor-house; and the knowledge that they could be compelled to do so would make even those hitherto willing to enter the poor-house hesitate. Such feelings, especially when a Government order is concerned, are very infectious, and it is quite likely that so many of the population would determine to disobey the law that it would be impossible to enforce it against them. There are many persons who would in time of severe famine be in need of gratuitous relief, and, without belonging to the highest castes, might very properly shrink from the degradation of entering the poor-house. To compel such persons to enter a poor-house against their will would be an act of despotism which I cannot see any justification for. Such legislation would show that Government had adopted a mode of relief from which a large portion of the population were naturally excluded, and that, to save the scandal of numbers of such dying of starvation, they were to be compelled by a penal law to accept a form of relief they would otherwise refuse.

How are the authorities to determine when recusants are sufficiently near starvation to be fit objects of compulsion? and supposing they refuse to eat when within the poor-house, how are they to be dealt with then? There is ample scope for oppression by petty native officials under such a law. The legislation proposed is objectionable on all or any of these grounds, viz., that the measure is one it might be impossible to carry out at all; under favourable circumstances even it would be very difficult in its application; it would be tyrannical towards those whom it is intended to benefit, give opportunities for great oppression, and be virtually an acknowledgment by Government that their system is not adapted to save the life of a very large class among the people.

Mr. Kirkwood.—I would never make entry into a poor-house compulsory except in the case of emaciated homeless persons, who have no friends to take them in, and who are evidently starving because they fail to procure sufficient sustenance elsewhere. These, when they have regained sufficient strength, should be sent on to the nearest suitable relief work. All orphan or deserted children under 12 years of age should be sent to orphanages whether they like it or not; but they should be restored on any person appearing to claim them, who may show a good title and may have the means of affording them support. I certainly do not recommend any law being passed, such as is suggested in this question; that is, generally speaking. But I should like a provision which would render it unnecessary to restore a deserted or orphan child to any prostitute or person of notoriously immoral life who may establish a claim to it as a relative.

BOMBAY.

Mr. Hewlett.—I think all persons found in villages in a state of starvation should be sent to the nearest relief-house, and kept there until the medical officer decides whether they should be admitted into hospital, sent to work, or kept in the poor-house. *Legislative action will be necessary for this.* District officers were in some cases averse to exercise force not given them by law. I believe that all reasonable people would approve of this action, as it is simply taken to preserve life.

Mr. Spry.—However desirable it may be for their own preservation to compel people to go to relief-houses or to works, the doing so is scarcely justifiable without legislative authority, where the objection to accept such relief arises from what we look upon as caste prejudice, but what the people consider a matter of religion. I think any legal enactment would be regarded with great mistrust. But where the objection springs from indolence, apathy, or such causes, a compulsory law would be of advantage, and I think generally appreciated. Without a law no one can be detained on relief, but with it the matter would be easy.

Mr. Charles.—I do not think it would be advisable to insist on anyone going to the poor-house who had scruples (well founded) as to his caste and position being lost by going, even though their lives were endangered by not going.

But, on the other hand, all vagrants, and persons such as labourers who object chiefly because they dislike the food and discipline of a poor-house, should be compelled to go, as their lying about in a helpless condition leads to disorganization among the other labourers.

It seems certainly expedient and necessary to obtain legislative authority. Much difficulty was felt in the late famine for want of legal power to deal with obstinate and lazy persons, who repeatedly gave trouble by leaving works, and being found so reduced that they had to be fed up in poor-houses before they could be sent to works again. The only solution found for such cases was that officers had to take upon themselves the responsibility of keeping such persons in what was practically illegal confinement.

The provisions necessary are—

(1.) Power to detain all persons whom the civil officers may think unable to maintain themselves, under a guard, or, if necessary, in a building or inclosure.

(2.) Power to punish incorrigibly idle and badly behaved or insolent persons, by summary punishment of a few stripes with a light stick without any trial by

Ch. III. Qn 25.

Bombay.

the civil officer. A certificate or order by some person acquainted with the previous desertions of work, &c. by the person to be confined, might perhaps be required before he could be put into the class of persons to whom the provisions of the law should apply.

Colonel Anderson.—When once a state of famine is proclaimed, no discretion should be allowed to manifestly starving people; they should be kept within an enclosure by force. All vagrants and persons without subsistence should be interned by compulsion. Legislation should be provided to meet any difficulties unprovided for in the present state of the law. Such might be made to come into force specially at any time and till any time notified by Government. There would be no fear excited by such legislation if it occurred in quiet times in anticipation of being required.

Central Provinces

CENTRAL PROVINCES.

Mr. Nicholls.—As long as we have the responsibility of using our individual discretion, executive officers will act promptly, effectively for the saving of life, the mitigation of suffering, and the public welfare, and discreetly; and any trifling mistakes we might make would no doubt be condoned by public opinion and by our superiors. But legislative limitations of his discretionary powers might place a zealous officer intent on saving life and mitigating suffering, at a time when his whole energy and time and care should be devoted to these objects, at the mercy of any pettifogging pleader or beggar.

I would rather stand on my responsibility to my superiors, and to public opinion, than be hampered with laws and rules.

If legislative action is necessary (and I think it is necessary), it would be in the direction of allowing the impressment of labour and carriage for food supplies or for the sick and infirm. I have seen the best efforts of officers thwarted to a grievous extent, by the haggling of cart-owners and the like for shamefully extravagant rates, at a time when the saving of human life was the object aimed at. In the marching of troops, when the destroying, not the saving of life is in view, the requisite powers are given to us. At present, when an emergency arises, cart-owners know that the public officers must assent to any degree of extortion on their part. Between special correspondents and shrieking but foolish arm-chair newspaper philantrophists, insisting that executive officers are to be held personally responsible for any deaths from starvation, and those who, from greed, combine to extort public money under this pressure, the position of a district officer is far from being an enviable one.

Madras.

MADRAS.

Mr. Crole.—When the lives of paupers are endangered owing to their neglecting or refusing to have recourse to the relief-camps, they must and they actually are taken there by force. The fences are impervious, and there are police and camp peons, who would prevent escapes. Such cases are, however, not numerous, and mostly occur in clearing towns of beggars, who prefer loafing about on the chance of picking up something, however little, to living in a relief-camp. Their condition, of course, goes from bad to worse, until the time comes when it is necessary to preserve their lives in spite of themselves.

Mr. Longley.—Entry into a poor-house should be compulsory in the case of all persons unfit for labor through starvation or disease, and who have no homes or relatives able to support them, and who have no ostensible means of livelihood. No discretion should be allowed to such persons of refusing to submit to this.

All camps or poor-houses should be *fenced* to prevent the escape of the inmates. Suitable guards should also be appointed—police for the entrance, and paid watchmen or taliaries to guard the enclosure.

This rule should apply to vagrants in the event of their being unable to travel, in which case they should be retained in the camp until either fit for labor or to return to their villages.

It should only apply to persons on relief works, who either fall sick or become too weak for work, and should not apply to persons seeking labor-relief.

Legislative authority for such action is quite unnecessary. The want of it has not been felt throughout this famine. The existence of such an authority would, beside exciting fear in the population, also lead to abuse on the part of subordinate officials.

Mr. Price.—The question raised is one entirely of State policy. I think that where the Government enter into relief operations on a wide scale, and with the professed intention of saving as many lives as possible, persons whose condition obviously shows that they are in want of careful watching, feeding, and medical attendance ought to be forced to enter poor-houses. There can be no other means of saving their lives. Village relief will be of no avail. These cases comprise those of what I should call dangerous emaciation. I would allow others, not in a dangerous state, who were unfit to work, to receive relief in their villages. The only steps necessary to take in order to prevent paupers escaping when once put into a poor-house is to enclose it properly, have as few outlets as possible, and keep these well guarded. We lost exceedingly few from the Cuddapah camps, and when an escape took place it was more the result of a sleepy watchman than anything else. I think that the dangerously emaciated only should be *forced* to go to a poor-house. This was our rule in Cuddapah. When inspections of gangs on works were made, the "very bad" were all sent into the relief-camps. Doing this was of course illegal but highly necessary. I consider that a short Act should be passed rendering it lawful for the local government, when the condition of the country is such that poor-houses are necessary, to empower any magistrate or other official or person as may seem fit to, at his discretion, cause any individual whom he may consider to be in a dangerous state of emaciation, but who is unwilling to enter a poor-house, to be forcibly removed thither and detained until sufficiently recovered to allow of his discharge. I do not think that there would be any objections to legislation of this sort. I believe that the people, excepting the agitators, would not trouble themselves in the least about it.

Mr. Oldham.—I do not advocate any systematised or legalised compulsion, nor do I see the necessity for any legislative enactment. At present the vagrant stragglers who are picked up in the bazaars are carried off to the relief-camps by a show of authority if not by actual force. They would prefer an uncertain existence by roaming about the bazaar, and stealing and begging, to the discipline of the camp. But then there is always the power existent to arrest such persons under the law as vagrants, and nowhere in India or elsewhere that I know of is there any difficulty in dealing with this class as they are now dealt with.

Captain Awdry.—With regard to making it compulsory for a starving man to enter a poor-house or relief-camp I would recommend legislation in regard to the vagrant and professional beggar class, and if any such are found begging they should, I think, be shut up in a closed camp and fed on the barest subsistence.

With regard to other than professional beggars, I think it would be a mistake to *compel* any man to live by coming to camp; in all such cases the individual should be most carefully warned of the relief which he can obtain if he chooses to live, but as famine may in a certain sense be considered as an effort of nature to get rid of over-population it appears to be straining philanthropy a little far, perhaps to the detriment of others, to shut a man up compulsorily and *make* him live where he refuses to do a simple act by which means of life are placed before him by Government.

Major Baynes.—The absence of a Vagrant Act affecting natives renders legislation regarding the treatment of these classes most urgent; it was impossible to legally carry out the orders of Government during the last famine. Officers were told that such a person must do this and such an one must do that, but the proverb anent taking the horse to the water holds good, and we were obliged to take the most arbitrary steps to save people against themselves.

MYSORE.

MYSORE.

Mr. Ricketts.—The answering of the first part of this question depends in a measure upon what consideration is shown to families and caste prejudices in the poorhouse. I think, however, on the whole that only persuasion short of actual compulsion should be used. I have been myself told by sufferers that, if sent to a poorhouse, they would run away from it, and I do not see how this is to be prevented, save by a system of guards and inclosures as expensive as feeding such persons outside of the poorhouse would be. Regular vagrants I would not deal so tenderly with, and legislative authority should be invoked authorizing a magistrate or bench of magistrates to make an order for their residence in a poorhouse when convicted of vagrancy. The term "vagrancy" should, of course, be first legally defined. As regards "habitual deserters" from relief works, I have already recommended legislative interference; here, too, properly defining the term.

In the two cases above put there would be no special objections to such legislation, having in view the risk of exciting fears in the population.

QUESTION 26.—RATIONS.

CH. III. QN. 26.

What ration should be given to the ordinary inmates of a poor-house, and what special diet to those who are much reduced by innutrition? Have you any experience of the effects of the ration for adults which consists of 1 lb. of raw flour with condiments? What is the proper quantity of condiments? State the results of your experience as fully as possible, whether this ration has or has not shown itself sufficient to support life.

Replies not summarised.

PUNJAB.

PUNJAB.

Mr. Nicholl.—Persons reduced by innutrition should be treated exceptionally on a diet of milk, rice and dál till their strength is restored. One lb. of raw flour with two or three ounces of dál or vegetable and ¼ ounce salt is, in my opinion, ample to support such persons as would seek the shelter of the poorhouse, who would have little or no labour to perform. My experience tells me that a native will live for a considerable time on from 8 to 10 ounces parched gram.

Mr. Benton.—The quantity of food given at the Karnál Municipality poor-house is as follows:—

Per Man -	8 chittacks of atta	together with a little salt.
„ Woman -	6 „	
„ Child -	4 „	

As the recipients take it away and consume it at their own homes, it is impossible to speak as to its efficiency or otherwise.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Dr. Jackson.—In the Sahàranpur poorhouse, which was open in April and May, the following was the scale of allowance of food:—

		Flour.		Dál.	
To adults of both sexes		8	chittacks,	1½	chittack.
Children above 10	-	6	„	1½	„
„ below „	-	4	„	1	„
„ in arms	-	2	„	1	„

Experience proved that this allowance was ample in the case of the weakly paupers, from whom only a very small modicum of labour, and that of the lightest character, could be exacted. The problem was not to establish a scale of dietary by which emaciated human beings might be fattened in the quickest manner, but to fix a minimum scale to avert the worst consequences of famine, and to put the inmates in such a bodily

condition as to permit of their being draughted to the relief works or employed on agricultural labour, should a demand spring up. The scale was sufficient for this purpose, as from time to time those who had visibly picked up were eliminated by myself from the poor-house. I have no statistics to prove this fact, but it was patent to all the gentlemen who were engaged in the supervision.

Mr. Sandys.—The rations at present allowed by the Government of these provinces are, I think, quite sufficient. I visited the poor-house daily between 17th September to 16th October 1877, and again when re-opened between 17th December 1877 and 7th April 1878, when not in camp. The rations were then—

	Flour. Ch.	Dál. Ch.
For working adults of both sexes.	10	2
Non-working adults of both sexes.	8	1½
Children above 10 years -	6	1½
Ditto below ditto -	4	1
Ditto in arms - -	2	1

Those who were not very emaciated before coming into the poor-house improved slowly on this ration.

The number of paupers discharged was—

Men.	Women.	Children.	Total
1,755	1,900	1,845	5,500

Dr. Hilson.—The ration suitable for an ordinary non-labouring inmate of a poor-house ought to consist of—

Atta made into chappatis - 8 chittacks,
Dál - - - - 2 chittacks,

with condiments.

This has been found sufficient to maintain in health an adult in the Agra poor-house. Vegetables (6 chittacks) and oil ought to be substituted for the dál three times a week.

Those much reduced by innutrition ought to be sent to hospital if possible, and fed on the above diet with the addition of kichri (4 chittacks) mixed with *ghi*. They ought to have two meals at least every day, and if much reduced, it will be found advantageous to increase the number to four.

But in every case it should be ascertained whether the pauper be suffering from diarrhœa, because, if so, the above diet is unsuitable and ought not to be given.

The undersigned has had no experience of the ration which consists of 1 lb. of raw flour with condiments; but it may safely be said to be insufficient to maintain a pauper in health for a prolonged period, even when firewood is supplied with it.

In the jails of the North-Western Provinces 100 grains of salt are given to each adult prisoner, and this has been found quite sufficient when the diet consists chiefly of wheat or barley.

But if a rice diet be given this quantity must be largely increased.

In addition to the salt one chilli per diem should be given to each pauper, and the addition of a few spices to the dál renders it more digestible.

Dr. Fasken.—My experience is, that men can work and remain fairly well on the ration of one pound of flour with condiment. All prisoners sentenced to one month receive this diet. They leave the jail well enough, but have generally lost weight. Women in jail always have this amount of atta, and keep their health. Prisoners sentenced to more than a month and up to three months also get this diet, provided they are not employed on very hard work. As the result of my experience in jails for the past year, of the ration of 1 lb. of raw flour with condiments, my opinion is that such a ration is sufficient to support life. About half a tola of salt and one chilli would be a sufficient quantity of condiments.

Mr. Story.—The rations given in the poor-house at Orai are according to the Government scale.

	Whilst employed at hard work.	Without labour.
Adult men or women, 10 chittacks flour.	8 chittacks.	
Children not in arms under 12 years, 5 chittacks flour.	4	do.
Infants in arms, 2 chittacks	2	do.

Where the infant is unable to eat, and being suckled by the mother, this allowance is given to the mother. I think this a liberal allowance and the people rapidly improved on it. Persons much reduced by innutrition were treated medically in the hospital, where they received rice, arrowroot, sago, corn-flour, and such things as the doctor deems necessary.

It has been found in the poor-house that one pound of raw flour with condiments is quite sufficient to support life; in fact the people pick up with that allowance. Amount of condiments given is 1½ chittacks dál, about a pice weight salt, and once a week vegetables, 1½ chittacks adult, 1 chittack child.

Dr. Freyer.—The ration for adult non-labouring paupers should consist of—.

Flour - - - 16 ozs.
Dál - - - - 4 „
Salt - - - 150 grains.

When vegetables are procurable, they should be supplied two or three times a week, each pauper being allowed 8 ozs. It would be well also to allow each person one or two chillies every day. This diet I consider sufficient to sustain life in non-labouring paupers. But when labour is exacted from the inmates of a poor-house, it will be necessary to allow them at least 4 ozs. more of flour; and when the labour is hard, even 8 ozs. I think, however, that it is a mistake to have factories in a temporary poor-house, such as that which is required in connection with famine. When people are strong enough to work they should be drafted to various public works in the district. No persons, save those who are absolutely unable to work, should be allowed to remain in a poor-house.

For those who are very much reduced by innutrition it will be necessary to prescribe a diet of the following kind:—

Rice - - - 12 ozs.
Milk - - - - 2 lbs.

and this they should have in two meals, one in the morning and the other in the evening. From personal observation I have ascertained that when weak and infirm persons come into a poor-house in a very reduced state of health, and are then fed on the ordinary chapatis, being unable to digest this food, diarrhœa soon sets in, the food passing through the gut in an undigested condition, and in many cases death supervenes. Persons of this description are more fitted for the hospital than the ordinary wards of a poor-house, and I think it would be an excellent plan to keep them in a separate portion of the poor-house, and that the hospital assistant in charge should be directed to pay particular attention to them, and see that they do not suffer from the kind of diet allowed them.

Dr. Mulvany.—Attached is a proposed diet scale. This is a slight modification of that laid down in Sir John Strachey's minute on poor-houses, and also slightly differs from that employed in the Rae Bareli poor-house. Diet No. 1 is for males going through really hard bodily labour. This includes water-carriers, wood-cutters, buriers of the dead, kneaders of dough, &c. It has been found necessary to keep a limited number of strong men for these purposes, and less than 12 chittacks is not sufficient for them. Besides, this is the allowance for men doing not harder labour on the roads. The number getting this ration should, of course, be strictly limited to the requirements of the poor-house.

PROPOSED DIET SCALE for PAUPERS.

Name of Article.	1. Adult males on hard labour.	2. Adult females labouring, suckling mothers, and temporarily enfeebled males, non-labouring.	3. Permanently disabled adults including old, blind, idiots, lepers, &c., of both sexes, and children from 10 to 15, labouring.	4. Children from 10 to 15, without labour, and children under 10, labouring.	5. Children from 1½ to 10 years, without labour.	6. Children under 1½ years (to be eaten by mothers if children be too small to eat).	7. Suckling children if mothers' milk be scanty.	REMARKS.
	Chittacks.	Chittacks.	Chittacks.	Chittacks.	Chittacks.	Chittacks.	Chittacks.	The flour should be of pure wheat only, as a rule Flour made of coarser grains causes diarrhœa. Very little, if any, bran need be removed; it does no harm if ground finely
Flour -	12	10	8	6	4	2	—	The flour to be cooked into cakes, the dry constituents of which weigh two chittacks each. Two chittacks dry become 3¼ to 3½ chittacks by mixing with water. The dough for each *cake* should be *weighed separately*, and should be about 3½ chittacks. This when cooked should weigh three chittacks.
Dál -	2	2	1½	1½	1	1	—	
Salt -	1/16	1/16	1/16	1/16	1/16	1/16	—	
Firewood	7	7	7	7	7	7	—	The hospital diet scale employed in the jails of the North-Western Provinces and Oudh ought to answer well for poor-house hospitals. Those "much reduced by innutrition" should be taken into hospital and get this diet.
Milk -	—	—	—	—	—	—	3	

No. 2 diet is for (1st) labouring females, to whom the same remarks apply as to labouring males; (2nd) suckling mothers, for whom a fairly generous diet is obviously necessary; (3rd) temporarily enfeebled adult males, non-labouring. Of these latter it is particularly necessary to speak. They come into the poor-house in a reduced state, yet not so bad as to require treatment in hospital. They are too weak to be sent on the relief works. The 1 lb. ration is not enough for these men, and they are slow in showing an improvement under it. They do, no doubt, gradually, as a rule, improve, but it would be more economical to give them 10 chittacks and get rid of them more quickly. They could then give some return by labouring on the roads, and besides make room for others in the poor-house.

No. 3 diet (*i.e.*, the 1 lb. ration with condiments) is sufficient for the class of people noted, viz., the permanently disabled. There is no chance of getting rid of such people until they choose to go themselves, and the 1 lb. ration is sufficient to secure their lives. This ration is also sufficient for children from 10 to 15, labouring. Boys of this age able to labour should seldom or ever be kept in a poor-house, so the diet will generally be applicable to young girls only. Rations Nos. 4, 5, 6, and 7 are those which have been in use in the Rae Bareli poor-house. They are sufficient, but not excessive. Children, as a rule, thrive well on these allowances. Sick children, of course, require special diet in hospital.

The quantity of dál and salt noted in diet scale A. is quite sufficient.

Seven chittacks of firewood all round for adults and children is an ample allowance. In fact, the entire of this quantity is never expended.

These should be treated in hospital, and the hospital diet scale in use in the jails of the North-Western Provinces should be allowed them.

I have had experience of the 1 lb. ration, both in the jail and poor-house, for the last ten months. The condiments noted under No. 3 diet in scale A. are sufficient.

(*a.*) *Experience in the Jail.*

Here the prisoners get 2 instead of 1½ chittack dál, but that is the only difference from the poor-house diet.

All male prisoners of one month's term and less have been on this diet since 1st November 1877. Also all female prisoners of whatever term. Of the latter it is sufficient to say that I have seen no bad effects from the diet. I have more particularly noted the effects on the male prisoners, and I shall speak of them. A special register of the weight and health on admission and discharge of these latter has been kept, and the result is shown in the following form:—

RETURN of PRISONERS of One Month's Term and under on 1 lb. Ration.

Period of Observation.	Total Number.		Health on						Numbers		
			Admission.			Discharge.					
	Admitted	Discharged	Good.	Indifferent.	Bad	Good.	Indifferent.	Bad.	Gained in weight.	Last weight	No change in weight.
Nov. 1877 to June 1878 -	553	529	353	127	73	384	112	33	224	104	201

This return shows an improvement both in health and in weight. The prisoners on this diet get only very light labour. A large proportion were in bad or indifferent health on admission, and even many of those whose health was noted as good had somewhat suffered in health from privation. In ordinary years the improvement in health and weight would not, I think, be so marked; indeed, more probably the reverse would occur. It is obvious that a man who has been accustomed to ¾ lb. of flour outside will improve to a certain extent in the jail where he gets 1 lb., while with a man who gets 1½—2 lbs. outside the reverse will occur. On the whole, however, it may, at the least, safely be concluded, so far as experience up to the present shows, that prisoners on light labour may be kept on this ration for one month without injury to health, and that in some cases the health improves.

(b.) *Experience in Poor-houses.*

In poor-houses two main objects must be kept in view: (1st), to support life and maintain such a degree of health that the pauper's constitution will not permanently suffer; (2nd), to support life and restore the pauper's strength so as to render him fit for labour on relief works. To secure the first object I think the 1 lb. ration is sufficient, but for reasons sufficiently indicated above it should be confined to the *permanently disabled* amongst full-grown people. Other adults will be either suckling mothers, labouring paupers, or paupers temporarily enfeebled, who require to be strengthened before being sent on the relief works. For none of these latter is the 1 lb. ration sufficient, according to my experience.

For old, infirm paupers (the permanently disabled) I think 1 lb. is sufficient to maintain them in their usual health. Many of these paupers died in the cold weather, but the ration was in no way to blame. Hundreds who survive are as well as they probably have been for years and show no signs of failing health. About twenty paupers belonged to the permanent poor-house before the famine, and used then to get 1¼ lb. None of these have suffered in health by the reduced diet.

Dr. Bonavia.—I am of opinion that the ordinary diet of inmates of a poor-house should not be less than that of non-labouring prisoners. It should be remembered that the latter, in addition, are better sheltered, well clothed, and have a blanket if they require it at night and their cots are raised from the ground; while starving paupers would, as a rule, be in rags, with no blanket, and lying on a "chatái" on the ground, which, in the rains, would necessarily be more or less damp. An individual emaciated from want of food requires food enough to—

(1.) Keep him alive.

(2.) To keep him warm.

(3.) To restore his organs to a comparatively healthy working state.

A large proportion of food goes to keep the *body warm* which can *never* be shown as *additional* weight. A man warmly clad and lying between blankets can do with much less food than a naked or imperfectly clad man.

The *best* diet for those who are much reduced by innutrition, and especially for those also suffering from diarrhœa or dysentery, is pounded *raw* meat. There is nothing to be compared with this. A much reduced man, or child, from starvation has no blood, and therefore no means of elaborating secretions for digesting *any ordinary food.* Raw meat makes blood at once with the *slightest* digestion. In a comparatively short time the individual so treated is enabled to digest coarser food. This is Weisse's treatment, endorsed by Trousseau and others. But as it is probably hopeless to get natives to submit to it, then small quantities of milk with ground rice boiled in it, with sugar and salt, every four hours, I think, would be the best diet, with stimulants and blankets. When the individual is found to digest this diet, ground *flour well sifted* should be substituted for the ground rice.

Dr. Planck.—The rations I would give to the ordinary inmates of a poor-house are for an adult male above 10 years of age, and for a woman with a suckling infant:—

No. 1 -
- 10 chittacks of wheat flour.
- 2 chittacks of dál.
- ¼ chittack of salt.
- ½ seer of firewood.

For an adult female above 10 years of age:—

No. 2 -
- 8 chittacks of wheat flour.
- 1½ chittack of dál.
- ¼ chittack of salt.
- 1 seer of firewood.

For children, male and female, under 10 years of age:—

No. 3 -
- 4 chittacks of wheat flour.
- 1 chittack of dál.
- ⅛ chittack of salt.
- ½ seer of firewood.

For those by whom, from prolonged innutrition, I believed the ordinary diet could not be digested, I would have a diet of boiled rice and ground dál as follows:—

No. 4 -
- 6 chittacks of dry rice.
- 2 chittacks of ground dál.
- ¼ chittack of salt.
- 1 chittack of ghi.
- 1 seer of firewood.

No. 5 - Half of No. 4.

The rice to be boiled, when it should weigh not less than 20 chittacks; the ground dál and salt to be made into gruel and poured over the rice; the diet to be divided into two meals; the ghi to be rubbed into the skin. If I thought it advisable, I would supplement this diet with a chittack of gur.

But, in truth, a man greatly emaciated from prolonged innutrition is in a diseased condition approaching to death, and even with the most careful treatment and dietetic management many such must die. It is the deaths of persons admitted in this condition which swell the mortality of a poor-house,—a mortality which has, as a rule, reached to between 10 and 12 per cent. of those admitted in the poor-houses where I have made inquiry. That is the result of many months' management; at first the deaths have occurred in greater ratio. But even with the best results of 10 per cent., the meaning of the ratio is that out of every 10,000 persons who passed through the workhouse (many come and go daily) 1,000 have died there.

One poor-house I have carefully inspected, where the ordinary diet consisted of one pound of barley bread. The general condition of the inmates was deplorable, the mortality had been excessive, and several persons were seen there who would certainly die before many days had passed. In another, where the diet at the time of my inspection had been increased, I received ample testimony that the former diet of one pound of wheat and barley flour mixed had been found insufficient, an excessive mortality accompanying its continuance.

I do not think any person of common sense, certainly no person who has given thought to the subject, will accept the conclusion that a pound of raw flour with condiments, which I take to mean salt, is a sufficient diet for a man for 24 hours. I feel sure that the inmates of a poor-house so dieted cannot be kept there. They will come no doubt to receive their ration of bread, but will beg or search in the day-time for additional food. If forcibly detained in the poor-house night and day, the generally bad condition of the people on admission will not give way to a general improvement, and the mortality will be excessive. I have seen a poor-house where this pound a day system was in force, in which the part called the "*hospital*" approached in extent and population to the part called the "*poor-house.*"

Mr. T. Stoker.—The poor-house was open from the 26th March to the 9th June 1874; during that time distributions of uncooked food were made daily to all applicants unable to labour on the relief works. The numbers were latterly about 100 per diem.

The rations were:—

Adults - 6 chittacks rice and 2 chittacks dál.
Juveniles - 3 „ „ 1 „

that is, 8 chittacks uncooked food to adults and 4 chittacks to juveniles. Each person received in addition a little salt, and on a few occasions a little turmeric was given to each.

The recipients were left to their own devices to cook their food as they liked best, and were at liberty to do what they pleased during the day. They belonged mostly to the class of professional beggars, and being one and

all quite unfit for work, could not have added to this ration by labour. Mendicancy was certainly open to them, but under the circumstances, very few of them could have gained anything by resort to it. There was no one to beg from except a few baniyas, and in the presence of the organized State relief, these men refrained from any private charity, referring all applicants to the works or the poor-house.

As the same persons continued receiving gratuitous relief during the whole time the poor-house was open, I am able to affirm that they not only remained in good health, but visibly improved on the half seer ration.

On the 7th June cooked food was substituted for uncooked, but the amount of the ration remained the same. A ration of uncooked grain having been weighed, was separately cooked, and then weighed or rather measured again, and the other rations apportioned accordingly. On the 9th June, the relief works having been closed, the workhouse was opened, and the paupers were confined within its limits and set to some sorts of light work. During the remainder of the time I was in charge of the workhouse, till 13th July, the condition of the inmates remained, so far as I could judge, unimpaired.

The only complaints I heard were not against the quantity of the food, but against the monotony of the diet and the practice of allowing only one meal in the day.

It may be broadly put down that the whole of these inmates were non-workers, as the amount of labour they did was so trifling as not to be worth taking into calculation.

I do not think the half-seer ration would be sufficient for adults who had to perform any real labour I would place the proper allowance for them at 10 chittacks, which I would divide into an evening meal of 8 chittacks and a midday or morning meal of 2 chittacks of chabena or some parched grain.

But for persons who have no work to do, I think (and I am justified by experience in thinking) that a 1 lb. ration is sufficient to maintain them in health.

BENGAL.

Mr. Kirkwood.—In Moradabad (1861) I see the poor-house ration was—

Adults, 8 chittacks flour, 1½ chittacks dhall.
Children above 10, 6 chittacks flour, 1½ chittacks dhall.
Children below 10, 4 chittacks flour, 1 chittack dhall.
Children in arms, 2 chittacks flour, 1 chittack dhall.

That was the allowance for those who did no work. Adult inmates of the poor-house who did some work received two chittacks of flour and half a chittack of dhall more.

In the months of July, August, and September, in the Cuttack district, the allowance, at first I think eight chittacks of rice, was increased to 10 chittacks. From the 1st October 1866 to December 1867, when operations closed, the rice allowance was 13 chittacks, or 1⅝ lb. The allowance was increased up to this standard, because it was found that, though the lesser allowances might serve to maintain life, the people did not improve upon them. The effect of the larger allowance in causing a material improvement soon became apparent. It was deemed poor economy to keep these unhappy creatures on a diet so low as only to admit of their lingering on in the same condition. As the Famine Commissioners (1866) remarked, however, light meals must be given to a fresh arrival starved and emaciated. The enfeebled digestion cannot then dispose of a full meal, and death often resulted from recklessness in this matter, albeit a recklessness that had its source in a humane and deeply-moved sympathy.

Together with the allowance of 13 chittacks of rice to an adult (given in two meals) we gave ⅓ chittack of oil and ⅓ chittack of salt. The allowance for a child was 8 chittacks of rice, and similar condiments. Further, each adult was allowed 1¼ chittacks dall, and each child ¾ chittack. Whenever fish was obtainable it used to be given in substitution for dhall on two days in the week. Ghee was also originally given in small quantities, but was discontinued when we got more ahead of the distress. Ooriyas are much given to smoking cheroots (made in their own villages), and during the damp and chill of the rains of 1866, when the poor things were in a very starved, diseased, and despondent state, the adults eating in our relief-houses had two cheroots per diem served out to them. This was found of great service in warming them and reviving their spirits. In the majority of cases no portion of the daily allowance was so eagerly looked for as the cheroots. With rice-eating population salt is, I believe, of special importance in keeping the people in a healthy state of body. In the hospitals extra luxuries were given, such as the medical officers saw fit to direct.

I cannot call to mind the precise allowance given in Bhagulpore. It consisted of rice, dhall, salt, and (I think) oil. The rice allowance was not so large as in Cuttack, for the people were not so reduced, and matters were more in hand from the commencement. I think it was 10 chittacks per adult. There is no doubt that our allowance of 13 chittacks in Cuttack was somewhat excessive; but it was thought better to be on the side of excess than of deficiency, and a margin was deliberately allowed for peculations by subordinates which we were practically unable to prevent. It was thought much better that these peculations should come out of the excess thus allowed than that they should reduce a subsistence allowance to something which was not even bare subsistence.

In Bhagulpore I was the subject of much good-natured ridicule because I supplied the famine hospitals each with a few tins of Liebig's extract, and two or three bottles of wines and spirits. But these were, as I knew would be the case, found very serviceable, and being taken as medicine, were not objected to. A little warm soup used to be a great thing for a fresh arrival, and kids were not always procurable.

At Ajmere (1869) the allowance to adults appears to have been 1¼ lb. of mixed rice and dall, or bajra and dall, or bread and dall; ¾ lb. appears to have been the allowance for every child above five years of age, and ¼ lb. to children below that.

In Cuddapah (March 1877) the food given was cholum and raggi mixed. Two meals were given daily, at 10 a.m. and 5 p.m., each meal consisting of ¾ lb. of the above grain for an adult male; women and children received less. Condiments were given besides. No betel-nut being given was one reason why the paupers disliked being detained in the camp.

At Dhurumpooree, in Salem (April 1877), many of the 1,000 occupants of the relief camp were in no way thriving. The ration of rice was consequently raised from 1 lb. to 1¼ lb. for adults.

Summing up, then, I would say, for the non-working occupants of a poor-house, the daily allowance should be as follows:—

Adults:
- 1¼ lb. of rice or equally nutritious food.
- 2½ ounces of dhall. Where fish is procurable, it should once or twice a week be given in lieu of dhall. Fresh vegetable curry should every now and then be given in lieu of the dhall.
- ¾ ounce of salt.
- ⅓ „ of oil.

Ch. III. Qn. 26.

BENGAL.

Children between 15 and 10 years of age.	1 lb. of rice. 2 ounces of dhall. ⅜ ounce of salt. ⅔ „ of oil.
Children between 10 and 5 years of age.	¼ lb. of rice. 1½ ounces of dhall. ⅛ ounce of salt. ½ „ of oil.
Children below 5 years, but no longer suckling infants.	⅜ lb. of rice. 1 ounce of dhall. ⅛ „ of salt.

The above is the weight of the food when cleaned and uncooked. Inmates of the poor-house who do some appreciable amount of work should receive quarter of an anna in cash besides; or, which would be still better, should be remunerated by piece-work for the work they do, whether it be spinning, or weaving, or rice-husking, &c. The rates for such piece-work should be fixed so as to yield on the average quarter of an anna a day; slightly more to those who really exert themselves, and slightly less to those who are given to be lazy. This money should be in addition to the daily food, and the recipients should be allowed to expend it as they may desire.

If the food ration is distributed cooked, it should be given in two meals, one about 10 a.m. and the other about 5 p.m. If (as I strongly recommend when such evils as poor-houses are necessary, and the recipients are not at the time actually starving) it is given uncooked, a weekly or fortnightly distribution would, I believe, suffice; at any rate, it need not then be more frequent than once a day. In the case of uncooked food, a small supply of fuel would have to be issued with the food ration.

I do not think the 1 lb. ration sufficient to revive people who have sunk into a low condition, though it may just suffice to keep body and soul together when no work is required.

The oil might, perhaps, if medical opinion is not opposed, be omitted or reduced to two or three times a week. In hospitals or in the case of people much reduced, milk, soup, and such like nourishment should be given. Rice water and sago have also been found of service in such cases.

BOMBAY.

BOMBAY.

Mr. Hewlett.—The question of what food is best to be given must depend on circumstances. During a great part of the famine, milk, which is undoubtedly the best food for infants, children, and persons so reduced as to be unable to retain solid food, was not procurable over a large portion of the Southern Maratha country. *The milch cattle had died*, or had been driven away to find pasture. Goats' and asses' milk was not procurable, for want of fodder to feed them.

The following ration was given at Belgaum to persons attending the poor-house, which they did once a day—each man received three *bhakarees* made of jowari flour, each woman received two *bhakarees* made of jowari flour, each child over ten years received one and a half *bhakarees*, each child under 10 years received one.

The weight of each *bhakaree* was six ounces, so that—

	lb.	oz.
A man received - -	1	2
A woman received - -	0	12
Children over 10 received -	0	9½
Do. under 10 received -	0	6

In addition, a ladle (about nine ounces) of mussoor dhall soup was served with the bread.

For the children about a pint of gruel was added, and after they were served, what remained was divided among the adults. Onions also were given.

Milk was served to sick children. To every twelve seers of the mussoor dhall after boiling, two seers of currystuff and one and a half seers of salt were added.

The above ration afforded, it was stated, an ample meal; and certainly, when I saw the people (upwards of one thousand) fed, they appeared to me to be thriving on it. This ration, under the energetic supervision of Mr. Shaw, the Zillah judge, saved the lives of large numbers. Mr. Shaw's report* on the management of this poor-house will well repay perusal.

At Bijapur Dr. Wall, Deputy Sanitary Commissioner, drew up a scale for children and mothers, which was adopted when possible in the Kaladgi zillah, and which answered well.

It was as follows:—

Children.	*Morning Meal.*	
	Porridge - -	grain, 6 oz. milk, 4 „ sugar, 4 drs.
	Evening Meal.	
	1 bread - - -	6 ozs. grain.
	½ pint dhall soup.	
Mothers.	*Morning Meal.*	
	1 bread - -	6 ozs. grain.
	½ pint dhall soup.	
	Evening Meal.	
	2 breads - -	12 ozs.
	Porridge - -	6 „
	½ pint dhall soup.	

This was for suckling mothers, with children at the breast.

The various local committees generally adopted Mr. Shaw's scale for all outdoor patients. I think 16 ozs. of jowari or bajri (not rice) flour, 3 ozs. of dhall for soup, 3 ozs. vegetables, 6 drs. of salt, 4 drs. of condiments, 2† ozs. of sweet oil, would be an ample ration for the inmates of a poor-house. This diet would, with the exception of 4† ounces of sweet oil, allowed instead of two ounces, be identical with what in all jails in Western India has for the last seven years been the diet for prisoners sentenced to hard labour *for three months and under*, and it has thus been found sufficient; and this diet, I think, might be given to working paupers, Mr. Shaw's diet scale being adopted for non-workers.

* A copy provided.

† Qy. drachms.

MADRAS.

Mr. Grose.—I am disposed to think the ration finally fixed by Government sufficient for paupers leading a completely idle life in a relief-camp. It seemed to me enough to support life, and even to produce a gradual improvement. The larger ration which was given for some time caused sickness, and the smaller ration was obviously insufficient. The ration finally fixed was as follows:—

20 oz. raw rice.	¼ oz. ghee or oil.
2 „ dholl.	$\frac{7}{16}$ „ curry-powder.
1 „ salt.	½ „ onions.
½ „ tamarind.	¼ „ garlic.

I think that the garlic might be omitted, that ¼ oz. oil would be enough, and that it would be better to give a little dry fish (or sometimes meat) and a few vegetables than dholl, which is less liked and less digestive. It is essential that there should be precisely the same rations and the same sort of cooking at all camps, or some will be more attractive than others.

As regards the special ration to be given to patients in hospital, Government prescribed a 24-ounce rice ration with meat; but I think the amount by which it exceeds the ordinary ration was seldom eaten, except by the hospital attendants. Milk, arrowroot, &c., and even meat should be given, but only in special cases and under the orders of a medical man. I have no experience of a 1-pound ration, but I am sure it would be insufficient.

Mr. Crole.—As regards ration, I have found the following sufficient for ordinary adult paupers:—

1 lb. raw grain.
¾ oz. dholl or 4 oz. vegetables or 2 oz. salt-fish.
½ „ salt.
½ „ tamarind.
¼ „ chillies.
A leaf or two of tobacco.
„ „ betel.
½ an areca nut.

When dholl is given, it must be triturated and then boiled slowly in water with the chillies, salt, and tamarind; thus forming a "char" or curry. If not given so, it causes diarrhœa.

With reference to this matter please refer to answer to Question 6, Section 1. of Chapter III. It must be remembered that in a relief camp the cleanliness, regularity, and freedom from exposure or exhausting labor add to the recuperative qualities of diet.

The ration now in force under G.O., No. 2,372, dated 24th July 1877, is as follows; and I think it unnecessarily high except for special diet paupers:—

ORDINARY.

		Per diem. oz	dr.
(1) For adults and children of twelve years and upwards.	Raw grain	20	0
	Dholl	2	0
	Salt	0	12
	Tamarind	0	8
	Chillies	0	8
(2) For children under twelve years.	Half the above rations.		

SPECIAL.

		Per diem. oz.	dr.
(1) For adults and children of twelve years and upwards.	Raw grain	24	0
	Vegetables	4	0
	Dholl	2	0
	Meat or fish (thrice a week)	3	0
	Salt	1	0
	Tamarind	0	8
	Ghee or oil	0	8
	Curry-powder	0	7
	Onions	0	8
	Garlic	0	4
(2) For children under twelve years.	Half the above rations.		

Between May and July 1877, there was the undermentioned much higher scale, under G.O., No. 1,648, dated 5th May 1877.

ORDINARY.

		Per diem. lb.	oz.	dr.
To all classes in camps	Rice	1	8	0
	Vegetables	0	4	0
	Dholl	0	2	0
	Mutton, excluding bone, or equivalent in fish three times per week	0	3	0
	Salt	0	1	0
	Tamarind	0	0	8
	Ghee or oil	0	0	8
	Curry-powder	0	0	7
	Onions	0	0	8
	Garlic	0	0	4

Children under twelve years were given half of the above rations.

NOTE.—I find this to be the same as that of special diet under G.O. of 24th July.

In my opinion these quantities were much too large and overtasked the digestive powers of persons reduced by long-continued privation. I have not observed that these larger rations caused the same improvement as the diet first mentioned, and which I introduced and worked for some time before Government laid down any rules on this subject.

Dr. Gray.—Since the great controversy between Sir R. Temple and Dr. Cornish, I have regarded the 1 lb. ration and half an anna as ruinous to health; but since I came into this district I have been at pains to ascertain what a laborer usually eats *per diem*, and I find that, in the majority of instances, a man very seldom gets more than half a seer, or 1 lb. of grain to eat. I have over and over again questioned people as to their daily wages and the number of people they have to feed at home, and I found that invariably the man cannot afford to eat more than 1 lb. grain a day.

To prove that 1 lb. of grain with half an anna was either insufficient or sufficient I, on the 26th August, got together four madigas—*i.e.*, four men of the chuckler caste—and placed them on the Temple ration. On the 26th, 27th, and 28th they did no work. On the 29th they carried big stones from a hill two furlongs away and placed them round my hut. This was a good day's work. On the 30th and 31st August and 1st September I made them dig a trench round my shed. I superintended their work and can certify that they worked as hard as any cooly employed by the Department of Public Works. The annexed table will show their weights on the days mentioned, also their ages and heights:—

Results of placing men on the 1 lb. rations and half an anna.

Name.	Age.	Height.		Weight.									Remarks.
				26th Aug.	27th Aug.	28th Aug	29th Aug.	30th Aug.	31st Aug.	1st Sept.	2nd Sept.	9th Sept.	
	yrs.	ft	in	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	
Mathigadu -	30	5	5	110½	107½	108	109	108	106½	106½	106½	108¼	I weighed them again a week after, on the 9th September, and found that they gained a few pounds. This diet will support life and keep a man in fair condition, but not in a splendid condition of health.
Kumbadu -	35	5	3	107	104	103	103¾	104	103	104¼	104	107	
Obigadu - -	19	5	2	92¾	91	91	91	92	91	92½	...	92	
Loduganadu -	17	5	0	78	75½	76	76½	77½	76	76¼	77	79	

From these investigations I am of opinion that 1 lb. of grain and half an anna is quite sufficient to keep a person in fair condition of health.. These men received 1 lb. of rice each with half an anna; out of the money they purchased three pies worth of dried fish (small) and three pies curry-stuff; these weighed respectively 1½ oz. and 3¼ oz.

I can certify to the fact that they ate nothing else. My shed was nearly a mile from the village and one-third of a mile from the relief-camp, so that it was difficult for these men to leave us unobserved. I had a peon watching over them day and night. Whenever I awoke at night I would see if they were present sleeping in my verandah. Besides this supervision they were promised rewards if they strictly abided by my instructions. After the eight days were over they told me that if they were always sure of 1 lb. (half seer) of rice and half an anna they would be quite content.

Dr. McNally.—The following observations occur in my first report on the Cuddapah relief-camp (poor-house) on 29th April 1877:—

"The universal complaint was 'give us meat or let us go away.' The present ration (cholum or ragi 1¼ lb., dhall 1½ oz., with vegetables and condiments) may perhaps be sufficient to support existence in an individual not previously reduced by starvation to the lowest ebb, but it is, without the slightest doubt, inadequate for bringing starved people back to working condition. The proof of this is the miserable state of the people who have remained in the camp since it was first opened. Every one knows that a horse in bad condition cannot be *restored* to working order without a much more liberal allowance than shall be required merely to *keep* him in good condition."

For people already much reduced by famine an easily-digested diet containing a fair proportion of albuminate, either in the form of meat, milk, or leguminous grain, and oil is necessary. The scale of poor-house diet introduced in May 1877 on the recommendation of Surgeons-General Gordon and Smith, was sufficient to restore the condition of people who had not been reduced too far and who had recovered from famine-diarrhœa.

In consequence apparently of the rapid improvement of people on this scale of diet, and the tendency of paupers to refer it to an insufficient scale of village-relief, an order (Madras G.O., No. 2,372, of 24th July 1877) was passed restricting it "to persons receiving special treatment under medical care," and directing for the other inmates of relief-camps (poor-houses) "a diet not exceeding 20 oz. of raw grain and 2 oz. of dhall." G.O., No. 2,473, of 8th August, added to this the necessary condiments.

This double scale of diet had only just been introduced when I was obliged to leave, but what I did observe of it led me to the belief that its introduction in the manner directed was not judicious. A second (lower) scale of poor-house diet would be proper *only* for such inmates as had regained fair condition but could not be drafted to relief-works. This class would comprise children too young to work, gosha women, cripples, and lunatics. *All others* should be retained on the superior scale as long as they are kept in a poor-house, that is, until they have been restored to working condition; then they should be sent to earn their living at relief-works or elsewhere.

During the height of famine there are frequent admissions to poor-houses of persons in an almost moribund state. These can only be rescued by medical treatment and special diet in hospital. This should be left to the discretion of the medical officer.

I have no certain experience of the effects of the ration for adults, which consists of 1 lb. of raw flour with condiments, beyond what may be gathered from inspections of the physical condition of individuals who had previously been subject to it. Regular reports of these were forwarded to the Sanitary Commissioner, and, as far as they went, they were decidedly unfavorable. Single inspections of this kind, however, cannot be regarded as conclusive, but may be taken to corroborate the more direct evidence of officers who, being stationary, had opportunities of watching the effect of the different rations upon the same individuals.

The query does not specify any particular kind of flour, but it should not be ignored that wheat and most other food-grains have a much higher nutritive value than rice.

In relation to this question it may be noticed that the relief wage was calculated on the price of rice, whereas in most places ragi and cholum, which are the ordinary food of the people, were considerably cheaper than rice. The period of greatest distress was at the time when the stocks of cholum and ragi had been eaten up and imported rice was the only grain obtainable.

Major Baynes.—We do not use flour in Southern India; but on a ration of 1 lb. of raw rice, adults in good condition deteriorate sooner or later, and if its issue had been maintained in the poor-house, the mortality would have been greater than it was; it did not seem to even temporarily allay craving for food in the case of adults recovering from the effects of previous privation.

N.B.—A ration is taken to represent the daily maximum of food and divided into two issues.

Of course it will sustain life for a short time, that is to say, a middle-aged healthy adult who gets it will live longer than one who gets nothing; but I have never seen a healthy one in prime of life maintain his condition on it, nor have I ever seen an emaciated one recover on it; in my experience the effect of 1 lb. of rice in such cases is simply to postpone death by starvation.

MYSORE.

Mr. Ricketts.—On the Mysore scale of food and condiments people have been known to improve in condition, and in fact thrive; but I think this is the exception rather than the rule. The ration referred to has been sufficient to support life; but in order to induce recovery and promote physical strength more change in the condiment part of the diet is necessary, especially as regards ghee, oil, sugar, and even meat occasionally.

A much emaciated man, woman, and two children, on my own premises are now fully restored to their pristine health and vigor, and this is mainly, I think, owing to their getting scraps of meat, bread, and milk, besides rice and condiments. The woman thus fed was delivered two months after receiving her of a fairly healthy child, now well and thriving, and thus it may be that a generous diet saved the mother's life as well as that of the child.

NOTE on the quantity of FOOD required for the support of LABOURERS employed on PUBLIC WORKS in time of Famine.

The principal data for guiding the decision of the Famine Commission on this subject are—

1. The dietary which has been sufficient for prisoners in jail:
2. The reports of the Sanitary Commissioners in the provinces recently afflicted with famine:
3. The statistics showing the ordinary consumption of the labouring population.

First, as to Jail Dietaries. The Report of the "Indian Jail Conference" appointed under the orders of the Governor-General in Council to consider this, among other questions relating to jail administration, was sent up in May 1877. The following are the resolutions arrived at on the question of the prison diet:—

RESOLUTION I.—That labouring prisoners sentenced for terms not exceeding three months should receive less than labouring prisoners sentenced for longer terms. Opinions were too conflicting to admit of our coming to any resolution as to the amount of reduction.

RESOLUTION II.—That the following scale be laid down as a maximum for adult male prisoners sentenced to hard labour—

1. Grain, 28 oz. (including 4 oz. pulse) in the form of sifted flour, or 26 oz. in the case of wheat, rice, or barley.
2. Green vegetables, 6 oz.
3. Fatty matter, ¼ oz.
4. Salt, ½ oz.
5. Condiments, ¼ oz. pepper.
6. Firewood, 1 lb.

A reference to the table in the Appendix (p. lxxiii.) shows that the diet scale existing at this time varied for labouring prisoners from 24 to 29·3 oz. of cereals and pulses in different provinces. The lowest rate was one of 24 oz. of rice alone in Burmah; the highest was one of 22·8 oz. of millets and 6·5 of pulses in the North-Western Provinces.

In 1879 the following diet scale was fixed for the North-Western Provinces and Oudh for adult labouring prisoners:—

Articles.	SCALE I. Males sentenced to more than 3 Months.	SCALE II. Males sentenced from 1 to 3 Months, and all Adult Females sentenced to more than 3 Months.	SCALE III. Males sentenced to 1 Month and under, Females sentenced to 3 Months and under.
Flour of mixed cereals mostly of the coarser millets.	22⅞ oz.	22⅞ oz.	18⅞ oz.
Pulse - - -	6⅛ oz.	1⅛ oz.	1⅛ oz.
Vegetables - -	5⅛ oz.	5⅛ oz.	5⅛ oz.
Oil - - -	1/16 oz.	1/16 oz.	1/16 oz.
Salt - - -	100 grains	100 grains	100 grains
Pepper - - -	1 chilli	1 chilli	1 chilli
Firewood - -	12 oz.	12 oz.	12 oz.

The evidence of the jail superintendents (medical men) shows that prisoners doing light work thrive on Scale III., and Dr. Walker, Inspector General of Jails, after a careful discussion of the chemical constituents of food, writes: "My conclusion is, therefore, that if "even a moderate day's labour is exacted, the wage "test should be fixed so as to enable a full-grown "man to purchase a daily diet containing not less "nutrition than—

"Wheat flour, 20 oz.
"Pulse, 4 oz.

"The value of the above articles of diet may be "stated at—

"Nitrogen, 255 grains.
"Carbon, 4082 „

"And I am of opinion that men will be able to do "a moderate day's labour on this diet, with the usual "allowance of condiments and firewood." He further goes on to say that if coarse flour (barley or millets) be given instead of wheat flour, 20 oz. of it will still be sufficient, "because natives will be able to supple-"ment the allowance with articles of food pressed "into service under difficulties, although not ordi-"narily regarded as food; and because I believe that "in most cases labour on the relief works is very "moderate indeed."

In Bombay the jail diet for prisoners sentenced to 3 months' imprisonment and under is—

Flour of millets and wheat mixed, 19 oz.
Pulse, 3 oz.

with 6 oz. of vegetables daily, and other condiments.

Dr. Hewlett, the Sanitary Commissioner for Bombay, writes: "The standard diet scales for prisoners in jails "are very good guides as to the quantities of food to "be given to labourers."

Secondly, our next set of data consists of the opinions recorded by the different Sanitary Commissioners and high medical officers who acquired experience on this subject in the recent famine.

Dr. Cornish, the Sanitary Commissioner of Madras, writes as follows: "In regard to calculations regarding "average grain consumption, it may be assumed that "two-thirds of the people require a full average "ration, and of the remaining third, half will require "a half ration, and the other half a quarter. These "are rough calculations, but founded on the relative "ages; the number above and below 10 years of age, "and of the latter, taking a separate account of those "from 0 to 5. Assuming, therefore, that 24 oz. of "cereal grain represent the average consumption of "an adult, the following quantities will be required "for the daily sustenance of a population of 100 "persons:—

	Lbs. of grain.
66 adults (above 10 years) -	99
17 children (from 5 to 10 years) -	12·75
17 (from 0 to 5 years) -	6·37
Total - -	118·2

CH. III. QN. 26.

MYSORE.

"It would be safe to allow a margin on this calculation, and to reckon that each 100 of the population require from 120 to 125 lbs. of grain per diem, say 1½ lbs. per head all round. The ration for a working adult, doing a fair day's work, which I recommend, is (*a*) the value of 1½ lbs. of grain, *i.e.*, the grain usually consumed by him, either rice, cholan, &c., (*b*) money to provide about 1 oz. of fat, 2 ozs. of pulse, and the usual condiments, chilies, coriander, turmeric, &c."

Dr. Henderson, Civil Surgeon of Bangalore, states in his evidence that, "for those who are to work harder" (*i.e.* harder than people in relief camps) "the lowest labour scale would answer, or its equivalent in money;" that scale providing, for prisoners sentenced for six months and under, a daily ration of 24 oz. of rice and millets and 3 oz. of pulse.

Dr. J. B. Lyon, Chemical Analyst, who has bestowed especial attention on the questions of the values of different grains in nitrogen and carbon, and the relation of the requisite food to the weight of the individual and the labour performed, considers that a "fair wage for men averaging in weight 105 lbs., on relief works under Public Works superintendence would be the value of 1½ lbs. of grain, plus three pie for contingencies, for seven days in the week, supposing him to do the Bombay task. A woman should get $\frac{9}{10}$ths of a man's wage. A boy or girl of from 7 to 12 should get half as much as an adult." For light labour the value of 1¼ lbs. a day, plus three pie, would be a sufficient wage for an adult male.

In the North-Western Provinces and Oudh, in the famine of 1877-78, the Government fixed the ration of an adult labourer at 20 oz. of wheat flour and 4 oz. of fat; and Dr. C. Planck, the Sanitary Commissioner of the province, states in his reply to the inquiries of the Famine Commission that he thinks that ration was sufficient.

The third class of data are those which are afforded by the agricultural statistics. In each province an effort has been made to estimate the annual ordinary out-turn of food grain on the one hand, and on the other, the annual requirements of the province, among which the most important is the ordinary consumption of food by the population. The officers charged with the task of preparing these figures have, in each case, taken great pains to ascertain the figure which may fairly be taken to represent the normal quantity of food that each individual on an average consumes; and they have consulted the best and most experienced authorities, Native and English, and their estimates are in consequence of great value in determining the question. This is especially the case when it is seen that there is considerable convergence between those made by several independent authorities in different parts of India. They are as follows:—

	Annual Average Consumption of Food per Head in lbs.
Estimate for the Punjab	456
North-Western Provinces and Oudh	460
Bengal	480
Central Provinces	411
Berar	400
Madras	460

In the four large provinces the estimate is about 460 lbs. per head, and in two smaller provinces it is less. Now 460 lbs. is almost equivalent to 1¼ lbs. a day, and this represents the somewhat luxurious living of ordinary years, from which a slight deduction can safely be made to show the restricted consumption of a time of famine. It seems, therefore, reasonable to deduce from these figures that a sufficient ration would be composed as follows:—

1 adult male	1½ lbs.
1 adult female	1¼ lbs.
1 child (a half ration)	¾ lb.

Total for three persons 3½ lbs. daily. As adult males and females are nearly equal in number, and are together about 66 per cent. of the population, the above ration would amount to 1$\frac{1}{6}$ lbs. a day, or 426 lbs. a year per head of the population; which is only slightly below the estimated consumption for the population in ordinary years when too high prices do not act as a restraint on their diet.

To sum up. The Jail Conference decided that for an adult male, doing such work as an ordinary relief labourer would do, a ration of 1¾ lbs. per day is too much; but they could not decide how much too much. In the North-Western Provinces and Oudh a ration of 1½ lbs. is in force for such cases, and has been found sufficient. The opinions of the two Sanitary Commissioners most experienced in such matters, and of the Chemical Analyst of Bombay, agree that 24 oz. of food is a sufficient ration; and the compilers of the agricultural statistics of the different provinces agree that 1¼ lbs. a day is as much as, or more than, the ordinary average consumption of individuals of all ages and sexes; from which it can be deduced that the ration of 1½ lbs. for a man, 1¼ for a woman, and ¾ for a child corresponds closely to what may be estimated as the slightly restricted consumption of a time of scarcity.

C. A. E.

CH. III. QN. 27.

QUESTION 27.—ORGANIZATION OF A POOR-HOUSE.

Give as fully as possible your views as to the organization of a poor-house. State how the food should be purchased and stored, what stock-register of it should be kept, and by whom, how given out to be ground, what the grinding task should be, how it should be received back and tested when ground, how given out to the cooking department; how information is to be given to the storekeeper or the head of the cooking department as to the number of rations required for adults and children, for ordinary, special, or sick paupers; in what way and in what vessels the food should be cooked, with how much water and fuel, what the weight of the cooked ration should be, whose duty it should be to test it, how it should be served out to the people, what discipline should be enforced among them while it is being served out and eaten? What precautions should be taken to see that it is eaten when received and not sold or exchanged, and that the children's portions are not taken from them by their parents or other adults? Under what circumstances should warm clothing be given, of what description, and at what probable cost per head? State what the rules of the poor-house should be as to the hours of rising, ablution, calling the roll-call, distributing food, going to and returning from work, and going to sleep? What arrangements should be made for personal ablution and washing clothes? What supervision is necessary to separate and take in time to hospital those who begin to sicken, or to distribute medicine to such as require it

but are not sick enough for hospital? State what work the paupers can be set to, what is most suitable for what cases, and how labour is to be enforced. What establishment is required (per hundred paupers) for cooking, grinding, sweeping the enclosures, cleaning the latrines, maintaining discipline, fetching water or wood or grass for thatching, removing the sick to hospital, or carrying out and burying the dead? To what extent may such duties be performed by the stronger of the paupers, and in case suitable persons cannot conveniently be obtained from among them, how should the necessary establishment be paid? What amount of general supervision is necessary? What registers should be kept up as to cash outgoings, stores in stock and issued, daily number fed, and daily expenditure of food, sickness, and death? Ch. III. Qn. 27.

Replies not summarised.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

Mr. A. Colvin.—The general arrangement of the Bijnor poor-house in 1877–78 is given below, but I must remark that though the arrangements were found to be well suited to this district, it is quite possible that they might be found unsuitable to the circumstances of others. For instance, thatching grass and bamboos are very plentiful and cheap here; in other districts it might be found impossible, or at any rate too expensive, to collect sufficient materials.

I.—General place and position of poor-house.—The poor-house was for most of the time in a large grove outside the town of Bijnor. For a short period it was in an open space, and this is no doubt the best position for it in mild weather. When the weather is either extremely hot or extremely cold the position is too exposed. It was considered preferable to have one central poor-house for the whole district, rather than a number of small poor-houses at out-stations, on account of the facilities for more complete European supervision. The best shape for the poor-house was found to be a rectangular one; this form of poor-house could be added to indefinitely. The poor-house was divided into barracks, each containing 16 huts, and each hut containing from 16 to 25 paupers according to the season of the year.

The huts consisted simply of two thatches set up in the form of an inverted "V." They cost Rs. 3-5-4 each. The whole poor-house was surrounded by a trellis of light bamboos bound together with string. The height varied from 3 feet to 8 feet according as the place fenced required more or less strict guarding. The latrines consisted of two enclosures fenced in by chatai matting, one being for men and one for women. Two sweepers were attached to each, and the filth was buried in trenches, which when nearly full were filled up with dry earth.

II.—Establishment.—The poor-house was under the general supervision of the Collector's assistants.

To aid in the work and to superintend the feeding of the paupers a committee of native gentlemen and other respectable persons was formed.

The paid officials of the poor-house were as follows:—

(1.) A munsarim on Rs. 50 per month, who resided on the spot.

(2.) Two (or when the number of paupers was small, one) muharrirs on Rs. 7 each. One of them was in charge of the stores kept at the poor-house, and of the accounts and returns connected with labour; and the other's duty was to prepare all returns and accounts not connected with labour.

(3.) A chaprasi on Rs. 3 per month, in addition to his food (the same quantity as was given to paupers), was appointed to the charge of each barrack.

One chaprasi was appointed to enter the names of fresh admissions in the general register.

One chaprasi was attached to the separate enclosure for lepers, and one to the hospital.

(4.) The establishment of chaukidars was liable to variation with the numbers in the poor-house.

(5.) For Hindus a cook and a kahâr were employed.

(6.) Bhistis and sweepers were appointed according to the numbers in the poor-house.

(7.) For assistance in guarding the place seven constables and one head-constable were supplied by the District Superintendent, Police.

III.—Rules for admissions.—Paupers were either those sent in from out-stations or those who came of their own accord for admission.

The regular time for admissions being early in the morning, those who arrived from out-stations later in the day were put into a separate enclosure and then fed and left for inspection by the Assistant Magistrate next morning.

Those who were found to be ill or very weak were sent to the hospital.

All admissions were made by the Assistant Magistrate assisted by a member of the committee. The applicants for admission were sorted by him into two enclosures, one for those who were considered in a fit condition for admission, the other for those who were to be drafted on to the roads. The chaprasi entered the names of all new admissions in a register kept in the subjoined form:—

Date of admission.	Serial number.	Name.	Caste.	Residence.	Class, *i.e.*, whether adult or child, and if child, whether over or under 10 years or in arms.	Remarks.

To each pauper was given a wooden ticket with his serial number on it. When all the new admissions had been entered in the register, received their tickets, and been fed in the admission enclosure, they were distributed amongst the different barracks of the poor-house. New admissions on being drafted into a barrack were assigned to a hut or huts; a separate register of the names and classes of the inmate of each hut was kept by the chaprasi. The names of new admissions were entered in the register of the hut to which they were assigned. Those applicants who were set aside to be drafted on to the roads received their food for the day, and were then sent off under a guard to the works which they were able to reach next morning.

All dismissals from the poor-house were also made by the Assistant Magistrate or, occasionally, by the Civil Surgeon.

The Assistant Magistrate (if possible) examined the inmates of about one-seventh of the poor-house each day so as to bring the whole place under inspection once a week.

No hard and fast rules could be laid down for admissions and dismissals, but the following principles were generally observed in the case of able-bodied adults accompanied by children unable to work.

(1.) An able-bodied adult with one child, of whatever age in good condition, was supposed to be able to support himself or herself and the child on the works.

(2.) When he or she was accompanied by more than one child it was considered that for the family to be self-supporting there must be at least one child over 10 to each child under 10.

These rules even, however, were liable to variation according to the severity of the distress. The lepers

were kept in a separate enclosure at some distance from the poor-house.

IV.—Food.—The food for Muhammadans and those who were indifferent as to the caste of the cook, was cooked by contract at the rate of Rs. 0. 4. 6. per maund of flour cooked. This included the cooking of the dál proportionate to the amount of flour, firewood, the use of iron vessels for cooking dál, and in fact everything except the cost of carriage of water, the construction of cook-houses, and that of the ovens in which the bread was baked.

The bread was baked in cakes containing each two chittacks of flour.

The flour was at first one-third gram and two-thirds wheat, but when gram became dearer than wheat the latter alone was used.

It was found by experiment that one maund of wheat flour produced 1½ maunds bread. When one-third gram flour was used, only one maund, 17½ seers of bread was produced.

The flour was brought ready ground in the Bijnor market from contractors at the regular market rate.

This was found cheaper than grinding grain in the poor-house, where it would have been very difficult to prevent heavy loss by theft and wastage. The flour was weighed in presence of the munsarim and made over to the cooking contractor, who was bound to produce the weight of bread corresponding to the amount of flour on the calculation above given. The different kinds of dál used were (1) gram, (2) urd, (3) masúr, (4) moth.

Chillies were cooked in the dál at the rate of ¼ seer per maund of dál. When vegetables were procurable they were given twice a week or (if possible) every other day in place of dál, but in double quantity.

The ordinary diet allowed was as follows :—

Class I.—Adults of either sex 8 chittacks flour (4 cakes) and 2 chittacks dál.

Class II.—Children between 10 and 15 years 6 chittacks flour (3 cakes) and 1½ chittacks dál.

Class III.—Children between 3 and 10 years 4 chittacks flour (2 cakes) and 1 chittack of dál.

Class IV.—Children at the breast one cake and ¾ chittack extra dál given to the mother.

Each class had a zinc ticket corresponding to it of a different shape for each class. Every morning the names of the paupers were called over in each barrack according to the chaprasi's list. This was done in the presence of a member of the committee appointed to distribute food tickets. To those who answered their names a zinc ticket corresponding to their class was given. The names of those who failed to answer were struck off, and they had to go through the processes of re-admission before they could obtain a meal.

When the zinc tickets had been distributed by the members of the committee told off for that duty, the food was taken round by other members, who gave to each person the amount of food represented by his zinc ticket, which he took from him and again returned to the ticket distributing members for re-distribution next day. The bread before distribution to the barracks was weighed in presence of a member, a maund at a time. The number of cakes was also counted: one maund of bread should contain 226 cakes.

Those who required, on account of extreme emaciation, an extra or special diet were kept in a separate barrack. They were selected by the Civil Surgeon.

The chaprasi in charge of this barrack always kept a supply of milk and *khichri* for persons arriving in a specially exhausted condition.

V.—Hospital.—A separate enclosure was made for the hospital at a distance of 200 or 300 yards from the poor-house.

It was under the charge of the Civil Surgeon, who visited it daily.

A compounder resided on the spot. The shelter provided was similar to that in the poor-house.

The diet for the patients was prescribed by the Civil Surgeon.

During the prevalence of small-pox a separate hospital was set apart for persons suffering from it.

On the appearance of a disease at all resembling cholera, another separate hospital was set up at a considerable distance for the reception of all suspicious cases; one section of it being for such cases while under observation, and the other for declared cases.

VI.—Labour.—The kinds of labour at which the paupers were employed were—

(1.) Spinning cotton thread.
(2.) Making bán rope from Bhabár grass.
(3.) Weaving cloth from thread made in the poor-house.
(4.) Sprinkling dry earth and other conservancy work in the poor-house.
(5.) Occasionally at filling tanks, digging drains, &c., in the neighbourhood.

Raw material was purchased through the tahsíldar, by whom it was given out to the muharrirs of the poor-house.

The muharrirs distributed to the chaprasi of each barrack the amount of raw material required, taking a receipt from him. In the evening the chaprasi returned to the muharrir the thread or rope prepared, and got a receipt for the amount returned.

Prepared material was then sent up to the Collector's office, where it was kept for sale under the charge of a special muharrir.

Daily stock returns supported by receipts were submitted by the tahsíldar, poor-house muharrir, and sadar godown muharrir.

VII.—Miscellaneous.—1. During the cold weather "razais" of cloth stuffed with rags were supplied to the more naked paupers at a cost of 4½ annas each.

Clothes were also prepared from the cloth woven in the poor-house. The clothes were stamped to prevent their being sold, but paupers on leaving were allowed to take their poor-house clothes with them.

2. Smoking and the use of fire were strictly prohibited in the poor-house.

3. The punishments inflicted for breach of discipline were—

1. Confinement during the day (with extra work) in the lock-up.

2. Short allowance of food for one or more days to those who could bear it.

3. Ejection from the poor-house for those who were in fit condition.

Mr. Sandys.—The quantity of flour, dál, and salt required was supplied daily by a dealer and made over by the tahsíldar or peshkar to the cooking department. No grain was stored or made over to the inmates of the poor-house to be ground. Most of the paupers were so much reduced before they applied for admission that they would at once have eaten unground any grain that might have been given them to grind.

For Muhammadans the cooking was done by contractors, and for Hindus by Brahman and Kahár cooks.

The number of chapáttis prepared and dál cooked had to be regulated by the number of inmates at the time in the poor-house and number of applicants on the previous day, and the quantity, if any, not distributed on the former day. The tahsíldar or peshkar informed the contractor and the cooks as to the amount of food required and kept an account of the quantity of flour and dál supplied. To infants and those who were much emaciated, milk was given, and those who were sick with the exception of those who were suffering from small-pox or were lepers, were sent to the dispensary for treatment. It was assumed that every seer of flour produced 1½ seer weight of cooked food. The weight was every second or third day tested by the tahsíldar. The paupers were required to sit down in lines within their enclosures, and the

food was given to each one of them and eaten at once by them, the tahsildar or peshkar and one or more of the members of the committee being always present at the distribution, and taking care that proper discipline was maintained, and that the food was eaten, or at least most of it, at the time, and that the children received their own portions. During the severe cold the larger number of the paupers slept at night inside brick buildings or enclosed verandahs; a few were supplied with the ordinary clothes worn by natives of this country and of their class at a cost of Rs. 24-10-6. The cost of the cheapest blanket procurable in this district is Re. 1-8-0, and a large number could not be purchased quickly or be made up very rapidly.

No hour was fixed for the rising of the paupers. They were usually up soon after sunrise and were almost all too weak and emaciated to wash or bathe, to which the class who came to the poor-house are not addicted at the best of times. By about 10 a.m., and before, when the numbers lessened, the entries in the registers had been compared with the numbers and names on the tickets, by the several muharrirs, and after this, distribution of the food commenced. No work was carried on outside the poor-house enclosure, but those who were able were employed in making about half a seer of rope or in the manufacture of three to four yards of cloth daily, and the women in spinning one chittack of cotton daily or assisting at the looms; such children as were able to do any work assisted their parents. The poor-house was visited by the Civil Surgeon, and the sick, when not ill enough to be sent to the dispensary, were treated by a Native Doctor deputed by the Deputy Surgeon-General, and whose services were paid for from the poor-house fund. When the largest numbers were in the poor-house, viz., 1,548, the following establishment was entertained for cooking, sweeping, cleaning the latrines, maintaining discipline :—

3 Brahman cooks	@ 1½ anna a day.	
1 Kahár	ditto.	
3 Bhishtis	ditto.	
4 Sweepers	ditto.	
3 Chaukidars	ditto.	
1 Muharrir	@ Rs. 10 per month.	
1 Native Doctor	@ Rs. 20	ditto.

The municipal police also assisted in maintaining order and the municipal conservancy carts were employed in removing the filth from the latrines when the poor-house was opened in a block of empty buildings within the boundaries of the municipality. No establishment was kept up for sending the sick to the dispensary, and carrying out and burying the dead; charges on such accounts were defrayed from the poor-house fund. Paupers were employed in burying dead.

A superintendent, drawing not less than Rs. 30 per mensem, should be appointed to each poor-house.

A register showing the receipts and expenditure should be kept up at the Collector's office. It has not been found necessary to make payments more than once a week.

At the poor-house a register should be kept up showing the quantity of flour, dál, vegetable, and salt purchased and expended daily, and also a register in the form prescribed in Rule 6, Chapter II. of North-Western Provinces Government Circular No. 51A., dated 11th May 1878. The Native Doctor in charge of the hospital should be required to submit a daily return to Collector, showing the number of patients in hospital, the diseases from which they are suffering, and also the number of the inmates treated but not bad enough to be sent to the hospital, and nature of their complaints.

Mr. J. Kennedy.—An official member of committee, secretary to municipality if possible, should purchase food through contractors, and direct a supply for three days in advance to be sent in and stored in the godown; weighed on receipt by stock-keeper in presence of member of committee, who should make out a receipt, to be signed by stockkeeper, initialed by committee man (this receipt will be a voucher which the contractor should give in for payment).

The amount of grain thus to be entered in stock register kept in this form by the daffadar or stock-keeper :—

Date and month.	Wheat.	Gram.	Barley.	Flour of Wheat.	Flour of Gram.	Flour of Bijra.	Bijra.	Dál, arhar.	Dál, mung.	Salt.	Chilies.	Oil.	Rice.	Sugar.	Milk.	Tobacco.

The grain given out for grinding should be weighed by stock-keeper in the early morning.

At rate of five seers per head, or half a maund per mill, four women grinding at each mill, sifting, &c. It should in the evening be received back (a special chaprasi and assistant writer looking after the people at work) and weighed.

Bran, loss, &c., recorded in following form :—

Date and month.	Number of mills.	Grain given.	Received			Remarks
			Flour.	Bran.	Loss.	

In the morning at daybreak, sufficient quantity should be weighed by stock-keeper, two cooks and assistant writer in charge cook-rooms to enable them to commence kneading, and balance of the amount required should be afterwards shown to the stock-keeper by the darogah or superintendent, who should obtain information necessary and keep a detailed diet book, of which an extract of one day at Sháhjahánpur poor-house is given as a specimen.

Each assistant writer (mate muharrir) calculates his required amount after calling the roll.

The darogah, with assistance of head writer and member of committee, calculates and checks the totals, and the day's entry is initialed by native member of committee for the day.

For sick and infirm the native doctor receives the meal, &c., which should be of wheat only, he having given a separate voucher.

The food should be kneaded in wooden or iron troughs and cooked on iron plates, similar to those used by Sikhs for Hindus, and in underground ovens for Muhammadans and Chamars; the dál or vegetables boiled in brass vessels or degs.

Thirty seers fuel are required per maund meal, with its proportion of dál or vegetables.

The weight of cooked rations should be 1½ times that of meal. The weight is tested by the special mate muharrir in charge of cook-rooms in presence of native member of committee, who presides over the distribution and indeed generally distributes with his own hands according to the scale noted on the wooden ticket of each pauper; the paupers all being seated on the ground in their inclosure according to the roll on the minor register kept by the mate muharrir in charge of the section, who calls over the names as food is given.

The people sit down and eat on the spot from 12 noon to 2 p.m.

All should rise at daybreak, have roll called before 8 a.m., have food distributed between 12 and 2.

Those working do so from 7 a.m. to 12, the afternoon being given for ablution, rest, washing clothes, &c.

In sections a pauper mate is told off for every 25, he assists in conveying to hospital those observed to be ailing, and to separate those requiring medicine only.

The work suitable to paupers is grinding corn for women blind and lame, making thread, weaving (the class of weavers, both Hindu and Muhammadan, being very poor, and furnishing many inmates), sprinkling earth about the inclosures suitable for children. One of the paupers to 20 or 25 told off as a mate, and expected to look after the others, under authority of mate muharrir over his section.

Labour can only be enforced by a threat to turn out a disobedient or idle inmate, or to withold portion of food. The establishment required is—

One paid cook and one pauper cook, Brahman, for 200 paupers can knead and cook one maund.
One kahár paid, 1 pauper } for 500 paupers.
One bhisti or waterman }
One barber - „ „
One sweeper (paid) for two inclosures - - „ „

And besides the 12 for the latrines (paid), *viz.*, two men and one woman for each of the four latrines.

A party of Chamár inmates, about 2 per cent., told off for burying the dead, carrying the sick and new admissions to hospital. Grinding corn done by paupers 4 per cent. of population.

Also this establishment—	Rs.
One darogah or superintendent per mensem @	25
One muharrir head writer - - -	15
One jamadar stock-keeper - -	12
One assistant writer - - - -	8

Assistant muharrirs 1 to 200 paupers, Rs. 5 each.

The large number of applications for posts at Rs. 5 a month showed how much educated persons fall out of employ, and need a kind of relief in times of pressure and famine.

The following registers are necessary, the forms given appended:—

I.—General register.
II.—Minor (for each section).
III.—Detail diet-book.
IV.—Diet register.
V.—Stock book, grain, &c.
VI.—Inventory poor-house property, cooking pots, &c.
VII.—Mill book.
VIII.—Establishment acquaintance.
IX.—Factory.
X.—Order book, committee and manager.
XI.—Superintendent's journal or roznamcha.
XII.—Superintendent's petty cash book.
XIII.—Nominal roll of deaths.
XIV.—Burial charges account.
XV.—Clothing register.
XVI.—Account of bran, &c.

General.

XVII.—Grain account.
XVIII.—Cash account.
XIX.—Ledger.

Hospital.

I.—Register.
II.—Daily morning state.
III.—Diet account.
IV.—Nominal roll of deaths.
V.—Monthly return of sick.

House relief would undoubtedly be popular, but it would be liable to great abuse. It was the only mode of relief which was largely sought for last year. I have already stated in para. 25 the grounds of the popular prejudice against poor-houses; part of this prejudice is undoubtedly well founded, part is based upon absurd suspicion of the designs of Government. At first last year no paupers would come to the poor-house in the Jalálabad tahsíl; afterwards by unfortunate arrangements for relief works the poor-house became overcrowded, having over 5,500 persons in it at one time.

Dr. Freyer.—The management of poor-houses should be entrusted to local committees. At the sudder station the committee would consist of the European and Native gentlemen of the place, with the Magistrate as chairman, who being under the orders of the Commissioner of the division, would communicate from time to time to the committee the views of the Supreme Government. The poor-houses at out-stations in the district should be managed also by local committees, but the tahsíldar or a Deputy Magistrate should be held responsible for its proper working. At the sudder station the poor-house should be visited daily by one of the members of committee at a certain hour in the morning, when he should decide as to the persons that are to be admitted and rejected respectively. He should visit every part of the poor-house, hear and decide complaints, inspect the cook-house, test the bread as to quality and weight, and notice particularly the sanitary state of every part of the poor-house. The Magistrate and Civil Surgeon should visit the poor-house at uncertain hours as frequently as practicable. It would be well that they should do so together once a week, so that in consultation on the spot they might introduce any changes that might seem necessary with reference to sanitation, food, &c.

The poor-houses at the out-stations should be managed in the same way if possible. They should be inspected once a month at least by the Civil Surgeon and one of the Magistrate's assistants; when practicable more frequently.

One of the most important points in the organization of a poor-house is to obtain an honest and trustworthy man to place in charge, who should live on the spot and carry into effect the orders of the committee. Such a man as this should be of a respectable family and of good caste and character, and should be allowed a liberal salary.

As a poor-house will always be established in the vicinity of a town of more or less importance, food-grains should not be purchased and stored. A contract should be entered into with one of the most respectable grain dealers in the place, who should be required to deliver the quantity of flour required daily at the poor-house. He should be informed daily of the probable quantity of flour that will be required. The muharrir in charge of the poor-house can always supply this information, as well as the number of diets required for adults, children, &c. The Hospital Assistant can supply information as to the number and kinds of diets required for the sick.

The bread should be baked in chapatis, each containing 2 chittacks; this is best and most economically effected in ovens (tandúrs). Fuel should be allowed at the rate of 6 chittacks per adult for cooking purposes. One seer of flour should weigh about one seer and a half when baked into bread. The bread should be tested by the muharrir in charge, and also by the Hospital Assistant, and daily by the member of committee who attends. The Civil Surgeon should also test the bread at his visits.

Whilst the bread is being served out and eaten, the paupers should be made to sit in rows along the sides of the squares which they occupy and arranged in groups of 25. There should be one of the warders always present to see that each person eats the portion of food allotted to him, and that the children are not deprived of their portions.

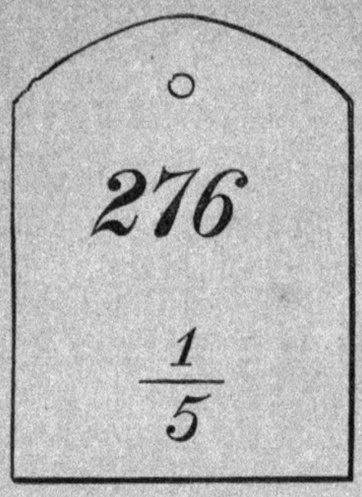
Persons who come to the poor-house in a naked or ragged condition should be supplied with clothing. The description and quantity will vary according to the season of the year. In the hot weather very little clothing will suffice, but in the cold weather it will be necessary to supply each person with a warm blanket jacket, and in addition one blanket should be allowed to each inmate. The cost of clothing, omitting the blanket, will be about one rupee per head, including women and children. Each blanket will cost about one rupee.

In the hot weather the inmates of the poor-house should rise at 6 a.m and go to sleep at 6 p.m. In the cold weather these hours should be altered to 7 a.m. and 5 p.m.

All the paupers should be made to bathe at least twice a week. This may be effected within the poor-house enclosure by the construction of small reservoirs, in which the water should be changed as frequently as possible. They will, of course, have to be situated near the wells or tanks from which the water-supply is obtained. If, however, there are tanks or a river in the neighbourhood of the poor-house, it would be an excellent plan to have the paupers led out in gangs daily for ablution purposes.

The roll should be called at 6 a.m. and at 6 p.m., and also at the distribution of food. I consider that

Each person on admission should receive a wooden number ticket, showing register number and date of admission thus :—



The figures to be branded on the ticket, which is to hang round the pauper's neck at all times.

The principal points to be attended to in the conduct of a poor-house are :—

1st.—The careful division of the sexes.
2nd.—Orderly arrangement of the paupers by day and night.
3rd.—The careful preparation and distribution of the food, the supply of good drinking water.
4th.—The maintenance of perfect cleanliness in and around the poor-house.
5th.—The division of the sick from the healthy.

As shown in the plan previously given, I think every poor-house should consist of a male and a female side; men and boys to inhabit the former; women, girls, and children the latter. It is true that a thin grass wall does not provide a very reliable means of division; but when the women and girls are kept together they can take care of themselves very well if they wish to do so, and to give them that opportunity is all that can be practically attempted in this direction.

The orderly management of the inmates in the day-time depends in great measure upon their employment in some useful way. At first much employment may be found for them in the improvement of their temporary home and its site. Always a considerable amount of employment will be provided by the daily necessities of the situation: sweeping for cleanliness; washing with clay water of compartment floors and diet places for smoothness, permanence, and wholesomeness; repairs of walls and roofs; and some of the inmates will be employed in ministering to the wants of the more feeble or emaciated, feeding them, rubbing them with the ghi of No. 4 diet, and otherwise helping towards their recovery.

Other of the inmates will be employed for the maintenance of order generally, and as assistants to the darogah. The preparation of the diets and their distribution, the proper collection and care of the drinking water, will provide employment for several persons. For I think that, managed by a competent darogah, no money for wages at all, excepting for himself and his chaprasis, would have to be expended in a poor-house. If the diet is good of its kind and sufficient, the people will not desire to evade employment in return for it. Of course if no mehters or kahars or bhistis can be found amongst the inmates it will be necessary to employ one mehter and one water-carrier for each side of the house, but not otherwise. The corn grinding will employ many women.

But when all these necessities have been arranged for, there will assuredly remain a considerable company of persons without employment, whereas employment in some form or other, lasting over several hours of the day, is essential for good management; and something of useful employment must be devised for the idle ones. I think there are two forms of employment very suitable for the inmates of a poor-house: the making of *múnj* string, and the manufacture of coarse cloth or *garrah*. The making of *múnj* string is the best of the two, if sufficient *múnj* can be obtained in the neighbourhood. Every native of common sense can make it; and if fairly well made, it will command a sale everywhere. But I think a certain number of the inmates may be usefully employed to make *garrah*, not for sale, but for distribution to such of the inmates as are nearly naked. The women and old men will spin raw cotton into thread; and on the men's side, either Hindu or Muhammadan weavers are pretty sure to be found who will weave it into *garrah*. By selecting, if possible, weavers who have wives and children on the female side, the weaving is likely to be well and expeditiously done, and the superintendent will then find himself in a position to remedy in some measure, at a cheap rate, the condition of nakedness so common amongst the inmates of a poor-house on first admission.

Hemp may be spun into string, coarse mats may be made from the leaves of the date-palm, baskets may be made from broom stalks, and in other ways employment may be provided, so that no capable person shall be quite idle all the day. But whatever is effected in this way should result from encouragement on one hand, and good feeling on the other, more than from any exacting of task-work. If that is found necessary the task must be light. Much in respect to the success of the endeavour to promote useful employment will depend upon the goodness and fulness of the diet given.

Orderly management in the night-time will depend entirely upon the sufficiency of the accommodation provided, and the division of the floors of the compartments into berth places, a berth place being allotted to each inmate. Strenuous endeavours should be made to ensure the reality of this allotment, and to ensure that an inmate lies in his or her allotted place during every night passed in the poor-house.

A trustworthy inmate of each compartment should be encouraged to report to the superintendent any infringement of the rule, provided that only 24 persons shall sleep in the compartment.

The fulness, careful preparation, and orderly distribution of the diet are *the* essential elements of successful management in a poor-house; upon it hinges the success, in every direction, of the endeavour; the willingness of the distressed people to stay, and be brought back to a condition of health and strength, their orderly behaviour, their willingness to accept employment—in greatest measure the lightness of the ratio of mortality amongst the inmates depends upon it; and if nowhere else, at least here the management must be thorough. In a previous section of this report I have entered certain diet scales which contain, I think, the necessary food elements to maintain life in health for persons of different ages, and to recover to health and fair condition persons of the ages mentioned who are emaciated from innutrition.

In considering this matter it is essential to bear in mind, and not only so, but to ensure the practical effect of such knowledge, that these diet scales are not food scales. The matter is of such importance as to necessitate detailed consideration.

The diet scale contains wheat flour, pulse, and salt so carefully and economically apportioned that, if food containing one-fifth less of any ingredient, certainly of either of the two first ingredients of the scale, should be habitually consumed, the person consuming such lessened allowance would be more likely to lose than gain weight after many days' experience of it. The important question then is—what amount of food will contain the full amount of the scale ingredients?

Any person who pleases may buy four chittacks of wheat flour and have it made into two cakes of well-cooked bread such as natives eat; and weighing the cakes he will find they weigh either a little more

or a little less than six chittacks, according to the amount of cooking they have received; but six chittacks is the general average. It follows that ten chittacks of wheat flour will be contained in 15 chittacks of bread.

The established method of preparing dál, or pulse, for food is as follows:—To two chittacks of split dál, placed in a brass lota or narrow-mouthed vessel, eight chittacks of cold water are added. The water and dál are slowly boiled together until about one-third of the water has evaporated. There remains a thick gruel of dál to be eaten, which will weigh seven chittacks, and about fill a *half-pint measure*. Salt is stirred into this gruel, and it is eaten with bread broken into convenient pieces, to serve as spoons to lift the gruel. It follows that two chittacks of dál will be contained in seven chittacks, or half a pint of gruel.

One chittack of dry rice, when boiled, will weigh about three and a half chittacks. It follows that the six chittacks of dry rice of No. 4 diet, when cooked, will weigh 20 chittacks.

The diet scales then, when arranged as food scales, will have this appearance:—

No. 1 food diet	15 chittacks of wheaten bread. 7 ,, ,, dál gruel. ¼ chittack ,, salt.
No. 2 food diet	12 chittacks ,, wheaten bread. 5½ ,, ,, dál gruel. ¼ chittack ,, salt.
No. 3 food diet	6 chittacks ,, wheaten bread. 3½ ,, ,, dál gruel. ⅛ chittack ,, salt.
No. 4 food diet	20 chittacks of boiled rice. 6 ,, ,, dál gruel. ¼ chittack ,, salt.
No. 5 food diet	10 chittacks ,, boiled rice. 3 ,, ,, dál gruel. ⅛ chittack ,, salt.

For the proper cooking of the food it is necessary that the bread should be made into round cakes weighing about three chittacks each when cooked, and measuring not less than six inches across. Eight inches is the best width.

The dál should not be cooked in too large quantities together; a vessel for every four messes, or 96 adult persons, will at least be necessary, and it will have to be large enough to hold 72 pints (nine gallons) of water, in which 12 seers of dál will have to be boiled until 48 pints (six gallons) of dál and water remain. When the boiling is finished, 24 chittacks of salt will have to be stirred into the 48 pints.

Before the distribution of the food commences every inmate should be seated in his diet space, and silence should be maintained. Two cooks, one having two assistants carrying bread, and the other two carrying the vessel of dál, will pass along the central passage of the diet spaces. The first cook should weigh out, with rough scales, 15 chittacks of bread to each adult inmate, and the second cook should measure a full half pint of dál gruel to each, using for the purpose of measurement a stout vessel of that capacity attached to a long handle; and the dál should be stirred before each measurement from the bottom upwards.

When necessary, a pauper should be furnished with an earthen cup to hold his portion of dál.

The diets of the women and children should be distributed in the same manner.

In some poor-houses I have seen the bread served out in full quantity, that is, 12 chittacks of bread, when the diet allowed was eight chittacks of flour. But I have never yet seen a poor-house in which the dál was being distributed in full quantity. It is certainly not easy to ensure that this most important item of diet is being given in full quantity, because of the necessity of boiling it with much water. But it may be laid down as a rule worthy of dependence that if half a pint, or a tumbler full, of the gruel weighs seven chittacks, it will contain two chittacks of cooked dál.

To ensure that the food is eaten when received, and not sold or exchanged, a rule must be observed that no inmate should leave his diet space until he has eaten the food given to him, or until all the diets have been distributed and eaten. A diet space must be allotted to every person, great or small, entitled to a separate diet; and the diet spaces of the children should be separate from those of the women, so that all the children may be dieted together. Amongst the children will be many orphans, and for their management at all times, and the general control of the children at meal times, two well-disposed women inmates, who have no children, should be placed in charge of the children's diet spaces, to note that the children eat their food, and to help such as cannot properly feed themselves.

In connection with a temporary poor-house it will be necessary to request a certain number of native gentlemen to assume the position of visitors to the poor-house, and the Collector should make the necessary arrangements to ensure that two of these gentlemen are present, one on each side of the house, every day at meal times, to closely watch the proper distribution of the food. The superintendent, the darogah, and the chaprasis will all help in the same direction. And it should be ruled that the distribution of the food cannot be commenced until a visitor or officer of the institution is present to watch its distribution. Much valuable help in many ways may be rendered by the native gentlemen visitors, who should be encouraged to take an interest in the proceedings generally, and to express their views and opinions freely to the superintendent.

The clothing of the inmates of a temporary poor-house is an important matter, for clothing, next to food, is a necessity of healthful life, but its satisfactory accomplishment is a matter entailing much vexation.

Many of the inmates by stress of misery have become sly thieves; many have lost all the better feelings of mankind; the population is ever changing. I have in mind a poor-house which at no time contained more than 1,200 inmates, and yet in six months about 17,000 admissions were recorded.

To supply clothing to a fluctuating population of this description with anything like satisfactory results, it is necessary that it should cost little, be difficult to sell, hard to run away with, hardly worth stealing.

The subject divides itself into night clothing and day clothing. For night clothing or covering I would trust principally to a thick thatch overhead and to the good repair and perfection of the grass wall at the back of the sleeping shed. I would give every inmate a palm-leaf mat to sleep on, and during the cold season from November to March inclusive, would cover the floors of the compartments with a considerable quantity of dry grass, straw, or cane leaf spread over the mats; and in this case the margins of the compartment would have to be bounded by a mud wall about two feet high, and the divisions of the berth places be a raised ridge of earth about six inches high and round at the top, thus—

For day clothing I would undertake to give only *garrah* cloth, and that only to persons whose clothes were quite worn out; a *garrah* dhoti to a man or boy, and a *garrah* petticoat to a woman or girl.

I have seen cloth distributed in this way to the inmates of a poor-house, and noticed that, as a rule, it was plain *garrah* torn into strips of scanty length, narrow width, and poor substance.

The cloth should be specially woven for the purpose with a brown line down the centre and at each

A well for ablution purposes and for the washing of clothing should be set apart; it should be near to the poor-house, and four good-sized tubs, two on each side of the well, should be provided to hold the water necessary for these purposes. The mouth of the well should be covered with a grating; a wheel, bucket, and cord should be provided, and two paupers told off to keep the tubs constantly replenished with water. A good-sized slab of wood or stone should lie on the ground in front of each tub. The tubs on one side of the well should be for men, on the other for women and children. So much of arrangement for this important requisite of health should certainly be made, and the paupers should be encouraged to wash themselves, and wash and dry their clothes, during the midday hours of warmth. But in practice it will be found very difficult, if not impossible, to effect the personal cleanliness of the inmates, until they have recovered something of strength from good diet, or have obtained the essentials of clothing, in lieu of the rags they generally wear on first admission. For, as a rule, people in bad condition, the result of innutrition, or people badly clothed, do not wash, because experience has taught them that washing adds to their discomfort, and may, in their case, become a cause of disease.

On each side of every poor-house there should be a portion called the infirmary, and the assistant surgeon of the district civil hospital should have medical charge of the infirmaries, acting under the orders of the superintendent. The assistant surgeon should visit the infirmaries daily.

In the infirmary of a poor-house only cases of extreme emaciation, threatening life, should be admitted. All cases of disease proper, both in applicants for admission to the poor-house, or happening amongst the inmates, should be taken to the civil hospital for treatment, extra accommodation there being provided, if necessary. I think the darogah should be required to take note of any case of disease coming to his notice, and to call the attention of the superintendent to it at his daily visit. The superintendent to deal with the case as he thinks fit. The persons believed to be sick by the darogah should be required to sit in line at the infirmary at the time of superintendent's or assistant surgeon's visit. A supply of the commoner medicines, or mixtures of pills, should be kept in a box at the infirmary for administration by the assistant surgeon to inmates suffering from trifling ailment, but all cases of grave disease should be removed to the civil hospital.

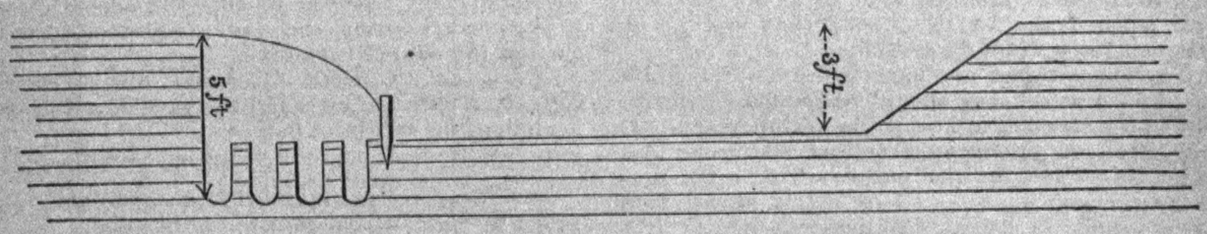
These sick persons should all be counted as belonging to the poor-house, and should carry their number tickets with them to hospital. In case of recovery they should come back to the poor-house. In case of death the word "dead" and date of death should be written on the ticket, which should be returned to the darogah, who will make the necessary entry in the register.

Inmates of the infirmary should receive No. 4 diet in two meals, and the ticket of every emaciated inmate dying in the infirmary should be returned to the darogah for the entry of the date of death in the register. Poor-house inmates of the civil hospital will be dieted in accordance with the rules of that establishment.

It is sad to write, but I know its truth, that, especially at its first opening, deaths are likely to be numerous amongst the inmates. In a well-managed poor-house these deaths should only happen in the infirmary portion or in the civil hospital. When the inmate of a poor-house dies, I think a great amount of consideration should be given to the decent interment of the remains. In the majority of instances death has been the last tribute paid to distress—that has been the sole cause, unavoidable distress; and the dead from such cause merit consideration.

I have seen many dying from this cause, and several dead; have noted the procedure in regard to their burial; have visited the burial places. The result has never been satisfactory.

I think the body of an inmate of a poor-house should be laid at full length soon after death. It should be carried on a short-legged charpoy from the place of death to the place of interment, covered with a coarse sheet of tát permanently attached to one side of the charpoy and attachable by strings to the other. The body should not be tumbled into the grave, but carefully let down, so that it may lie at full length, face upwards; and for this purpose the grave should be long enough to permit a man to stand in it at the head, and a man to stand in it at the feet of the corpse. It will probably be found very difficult, if not impossible, to provide a separate grave for each corpse; but, at least, every corpse should have a separate cell in the common grave. A waste piece of land in the neighbourhood of the poor-house should be selected as the burial ground, and a party of the inmates should be employed to dig a trench eight feet wide and three feet deep, the full length of the burial ground, and the bodies should be buried side by side in this trench, each in a separate cell dug two feet deep and six feet long in the floor of the trench, one foot in width of earth being left undug between each cell. Prepared in this way, a section of the common grave will have this appearance—



In a trench grave of this description the burials may be effected with a decency and reality difficult to accomplish with separate deep graves. The trench should slope at one end, so that the bearers may carry the charpoy into it without difficulty.

I need scarcely say that no Hindu, and very few Muhammadans, will touch the dead body of a stranger. It is absolutely essential for the success of this undertaking that two strong well-paid mehters of middle age should be appointed to prepare the corpse for burial, to place it on the charpoy, to lift and carry it to the trench, to dig the cell, place the body in it, and fill the cell in with earth well pressed down and levelled.

The portion of the trench utilized for burials in any day, having been marked off by a movable shutter or hurdle, should be as much as possible filled in with earth by the evening of that day. The people who dig the trench will fill it in, if the mehters have done their duty well in regard to the cell-interment in the floor of the trench.

It is likely that in any poor-house there may be several mehter inmates. If that should be the case, they should be employed to fill the trench and otherwise help towards the decent interment of the dead. But this important work of burial, which to my knowledge greatly needs improvement, cannot be left entirely in the hands of the pauper inmates, or in the hands of the police. It must be controlled by at least one trustworthy mehter, who should be encouraged in his office to such extent as to make it plain to his mind that the authorities attach great importance to the matter; do really desire, and have determined, that a person palpably dead of distress, or indeed from

Ch. III Qs. 27.

North-Western Provinces

any other cause, shall have decent burial in a grave which jackals and other wild animals cannot disturb.

Every inmate at the time of receiving his or her number ticket should be cautioned to take care of it. It should be hung about the neck by a string, be described as Government property not to be thrown away, absconded with, or exchanged. Every day at meal time the inmates when assembled to receive their food should sit with the ticket hanging in front of the neck, and an inmate without a ticket should not receive his food without the express order of the darogah, who will refer to the register and issue a new ticket, if necessary. Only one thing should be required of inmates who wish to leave the poor-house, and that is, that they should present their number ticket to the darogah before leaving.

Whenever many of the inmates have recovered condition and strength, a considerable proportion of those recovered persons should be discharged from the poor-house to be received as labourers on the most conveniently situated famine relief work. The superintendent should select persons for discharge, and at the time of discharge the darogah should receive their number tickets.

The number tickets of inmates who leave or are discharged should be marked accordingly and placed in a box in the darogah's office; and in the evening the darogah will make the necessary entries in the register, guided by the tickets.

Carefully worked, I think this system of number tickets will necessitate the keeping of only one register of admissions, discharges, and deaths.

A register of food issued will be required. It may be kept in the following form :—

(*See table on page* 260.)

It will be observed that wheat, and not wheat-flour, is entered in the diet register. The loss of weight, resulting from the grinding of wheat into flour, averages about one seer in the maund, or one-fortieth part, which upon a diet of ten chittacks would be about ¼ of a chittack. I do not think any harm would result from so small a loss, but to rectify the trifling error, an increase of one-fortieth may be added to the total amount of wheat charged for in each day, which, for the day of example given above, would be 9 seers 8¼ chittacks.

There is much advantage in entering wheat, and not flour, in the register, as then the total of the diet scales represents exactly the quantity of each article of food to be purchased of the grain merchant for each day.

The wheat will of course have to be ground into flour by the inmates of the poor-house, and much attention must be given to this important work. A compartment must be set apart as a grinding room. Its roof and walls must be good enough to keep out wind and rain, and its floor well beaten down, levelled, and often washed over with clay water. A sufficiency of grindstones of good quality must be provided, set out in order on the floor, and, as corn-grinding falls by established custom in this country to the lot of the women, the grinding room should be on the female side of the establishment.

Two women, sitting together at the stone, will grind 15 and even 20 seers a day at contract rates for a baniya in the bazaar, but I do not think more than 10 seers a day should be required in return for a subsistence allowance of food.

At that rate for the grinding of the 9 maunds 36 seers 12 chittacks of the entry for wheat in the diet register above, equal 397 seers, 40 pairs of grindstones would be required, and the grinding would give occupation to 80 women.

The task exacted from two women may appear light, but I have noticed that if a heavy grinding task is exacted the wheat is badly ground, and there is much delay in the grinding; whereas for the full advantage of the work it is necessary that the wheat should be very well ground, and the grinding completed early in the day, so that the cooks may not be hurried in the bread-making.

Concerning the supply of food articles, I think that should be arranged for with the most respectable baniya of the neighbouring town; certainly as regards all the articles of the diet scales of comparatively small quantity. In regard to wheat, the superintendent might be allowed to exercise his judgment as to the market from which it should be purchased, and it might be advantageous to keep a considerable store of wheat for poor-house use. But a weather-tight store-house must be provided, the wheat should be packed in bags containing a maund in weight each, and a police guard would probably be necessary.

Bengal.

BENGAL.

Mr. Kirkwood.—This question as to the organization of a poor-house has been somewhat touched on in answering Questions 24 and 25.

If Government has not imported grain, the grain required for a poor-house should be purchased wherever the largest stores are available within reach. It should be stored on *machans* (raised platforms) in a store-house erected for the purpose within the precincts of the poor-house. There should always be a month's supply in hand. Condiments, such as dall, fish, salt, oil, vegetables, and such miscellaneous articles as might be required should be purchased by the superintendent of the poor-house from an advance made for that purpose. He should purchase in the cheapest market near at hand. With a view of making him do so, the chief relief officer in each district or portion of a district should, on the 20th of each month, circulate to all poor-house superintendents a list of rates, above which charges will not be passed during the ensuing month. This list should be made up from the average of the prices current in the cheapest local markets.

The stock account of the grain should be kept as follows:—

Register (*A.*)—*Grain stock account.*—(1) name of poor-house, (2) month and date, (3) balance in hand, (4) quantity of any receipts during day as per chullan and whence received, (5) amount of short weight, (6) net amount received by superintendent, (7) quantity expended during the day, (8) balance in store at close of the day, (9) remarks.

N.B.—The "quantity" should always set forth both the number of bags and the weight of the grain, including the weight of bags.

The details of column 7 should be as follows :—

(*a.*) Weight of grain issued in cooked food.
(*b.*) Weight handed over to the hospital.
(*c.*) Weight distributed uncooked.
(*d.*) Any other expenditure of grain.
(*e.*) Weight of broken rice resulting from cleaning.
(*f.*) Weight of husk ditto ditto.
(*g.*) Weight of the bags in which the grain (*a.*) to (*f.*) was contained.

This register should be kept up daily by the poor-house superintendent.

If rice, the grain should be cleaned in a shed close to the store-house. It should be cleaned by poor-house labour. The total weight of (*a.*), (*e.*), and (*f.*) as above should equal the weight given to be cleaned. From this cleaning department the cleaned grain should be handed over to the cooking department. The storekeeper (who would be the poor-house superintendent) should make his issues to the cooking department in accordance with the numbers present at the last meal, unless he knows either of considerable

admissions into, or of considerable numbers drafted out from, the poor-house in the interim. Such circumstances, of which he, being the superintendent, will of course be cognizant, should be taken into consideration. The feeding of the hospital (*i.e.* the sick) paupers should be entirely in the hands of the native doctor in charge of the hospital, and beyond issuing to him such grain as he may require, the superintendent would have nothing to do with their feeding. In the superintendent's own department no person should be getting special food unless under written orders from the native doctor of the hospital. That written order should be filed with the accounts; it should state the amount and nature of diet to be given. Any alteration in, or withdrawal of, this diet should be notified by another written order, also to be filed. Any surplus of food from one meal should be utilized at the next meal.

The food should be cooked in earthen pots. I do not know the necessary quantity of water or fuel. If rice, the cooked ration would be in bulk just about treble that of the uncooked clean grain. If dall, the cooked ration would be in bulk about eight times that of the uncooked. It should be the duty of the superintendent to test the food. It should be served out to the people in earthenware measures. The measures should be such as just to contain the cooked ration. Thus, whenever for a district the ration is decided on, the amount of the ration should be cooked in the presence of a trustworthy officer. Earthen pots (separately of course for grain, dall, &c.) should then be prepared of a size which will just hold the cooked ration. Several pots of each of these sizes having been prepared, some 50 of each size should be sent to each poor-house. They should bear distinctive marks (to be made while they are being baked), so that they may not be changed at the poor-house. Smaller salt and oil measures should be likewise made and supplied. In default of earthenware, tin should be used; but tin is objectionable on the score of caste. Otherwise than under special circumstances, I have already said that I would not have cooked food distribution anywhere except in hospitals (and of course in orphanages). I would have the poor-house a settlement of detached huts; and the food when cleaned should be served out uncooked, the superintendent going round each day (if necessary; I think somewhat less frequently would be equally efficacious) at a fixed hour to each hut, and serving out the allowances in bulk for the hut, allowing the occupants of the hut to divide it amongst themselves. One of the hut fraternity or sisterhood should be selected as the head of each hut, responsible in a great measure for its goings-on, and bound to render immediate information to the superintendent about absences or illnesses, and to report laziness at work, &c. This person should receive the food and should subdivide it; but if the denizens of the hut so request, it should be meted out to them individually. The fuel for cooking should at the same time be given in bulk for the hut, the occupants making their own arrangements for its distribution. The issues of food and fuel should be taken round in a cart, the necessary subordinates attending to weigh or measure them out.

If the food is given out cooked, and the people are not thus located in huts, there should be separate feeding enclosures (*a*) for special diet (*b*) for workers on ordinary diet, (*c*) for non-workers on ordinary diet Each of these should be subdivided into (1) an enclosure for Mahomedans and others not particular on the score of caste, (2) an enclosure for Hindus of the more respectable castes.

Each of these pens should be again subdivided into separate partitions (*u*) for men, (*x*) for women and children under five years of age, (*y*) for children between 10 and 15 years of age, (*z*) for children between five and 10 years of age. Thus (omitting those on special diet) there should be 16 separate feeding compartments. These compartments should be in one block, and should be separated by partitions of mats or split bamboos about five feet high so as to prevent a person seeing from one into another. At the gate of each compartment a poor-house peon should be stationed to see that only those who should enter that compartment do so, and to prevent any disturbances without or within the enclosures. Every person should on admission be given a special seat in his compartment and should always at meal time sit there during his residence in a poor-house, subject, of course, to a change of compartment on a change of the class to which the person may belong. There should be six bricks placed flat in two rows of three each as a seat for each recipient. These pedestals should be at distances of three feet apart. On them the recipients should sit while taking their meal. This will prevent undue crowding and will tend to order. The superintendent or his assistant will then take the register of names (*vide* Question 24) and see, compartment by compartment, who is present and who is absent. As he proceeds along each compartment the cooks serving out the food should follow him, distributing as they go. Supposing that, as I have recommended, the numbers of any one poor-house are not allowed to exceed 500, this operation would take perhaps about an hour or a little more. It would, however, be better to have distribution going on in two places at once, the superintendent taking one-half with one set of cooks, and his assistant the other half with another set of cooks. The operation might then, together with due time allowed for eating, take one hour. The food should be first served out to the children, then to the women, and then to the men. The meal times should be twice a day, 10 a.m. and 5 p.m. If the weather is rainy it will be necessary to watch for a break in order to make the distribution. Indeed, it would be better then to make the distribution under cover, if there is any suitable spot. No talking above a whisper should be allowed while the meal is going on, except in answer to questions from the authorities. The cooks should bring from the cook-shed in baskets or (in the case of dall) in pots the cooked food of each compartment, and should set it down in an appropriate place in the compartment, whence it should be taken round in smaller receptacles by the distributing cooks, who should finally measure it out to the paupers in the approved ration measures, one taking the rice, one the dall, &c. Each pauper on coming into the poor-house should be given an earthen pot for rice, one for oil, one for dall, and one for water. These will not be replenished while he is in the poor-house, except for some special reason. When he leaves, he will be allowed to take these pots with him. The paupers will always bring these pots with them into the feeding enclosure. They will ordinarily provide themselves with drinking water, unless for sanitary reasons it may be thought better that watermen should be entertained to serve out drinking water to them at meal times. A stock of leaf-platters should be kept, and on these the meal should be served out to persons who may have broken or lost their pots. When the hour allotted for feeding has elapsed, the paupers should file out of the feeding compartments as they may wish. Non-residents should not, except on special permission, be allowed to take away any portion of their meal. Residents in the poor-house should be allowed to take with them any portion of their meal remaining. All should have left the feeding enclosure within half an hour of the conclusion of the distribution. A gong should then sound. I do not think food will be exchanged or sold if the distribution is thus managed and the recipients reside in the poor-house. I do not think that even the non-residents *i.e.* the persons who only come for the meal (a course to be allowed only when the famine is extreme and inadequate provision has been made to meet it), would to any considerable extent barter away the food thus obtained. The children will obtain sufficient protection against the danger of their food being purloined by the course above advocated. Except when the pangs of actual starvation have taken possession of a woman, I do not think she will rob her infant child eating by her side. I should say that, if she did so,

there would be good grounds for an inquiry as to whether her own meal was not inadequate for her support.

Clothes will have to be supplied to each resident in the poor-house who may be in need of them. Blankets also will have to be issued for the rains and cold weather. If they can get an opportunity of bartering away their clothes and blankets, the paupers will frequently do so. Especially will the non-residents be transgressors in this respect, if such are allowed on the poor-house books. The only plan for checking such acts is steadily to refuse any further clothing to the person so acting, at all events for some little time, and also (if the person is a male and physically capable of standing it) to administer a slight castigation. If the circumstances of out-door recipients are such that clothes and blankets must be given them, the distribution should be a single and final one. The clothes and blankets issued should, if possible, be of a special and easily recognizable pattern.

I cannot say exactly what the cost of such clothing would be, but I should imagine that it would not fall short on an average, for adults and children taken together, of two annas per mensem for each person. Clothes and blankets once issued should not be withdrawn when a person leaves the poor-house.

The inmates of a poor-house should rise at or before 6 a.m. in summer and 7 a.m. in winter. From rising time to 8 a.m. they should be induced to frequent the latrines with regularity. There should be separate latrines for men and women. They should be situated about 100 yards from any other part of the buildings. At 8 a.m, the paupers should be mustered and each person should have a certain quantity of oil poured on his or her head. This acts like soap, but if given into their hands is too apt to be used as food. From the head the oil is gradually rubbed over the rest of the body. After being thus anointed each person should move off to bathe, the peons of the establishment seeing that they do so. At the feeding time, when the superintendent goes round, any person who without cause is very filthy in appearance and does not appear to have bathed should be cut half the ration for that meal. There should be another muster at 9.30 a.m., in time for the paupers to be seated in their feeding enclosures by 10 a.m. After meal time the non-labourers should have the rest of the day to themselves, until the evening muster, which should be at 4.30 p.m., preparatory to the 5 p.m. meal. The people should wash their own clothes at the time of their bathing. In hospitals a special washerman will have to be entertained for washing the clothes. Wherever possible, a river should be used in preference to a tank for bathing and washing purposes. The workers in a poor-house should be called over at 7 a.m. and should work from 7 to 8.30 a.m., when they should muster for bathing. They should rest after their meal till 1 p.m., and should work again till 4.30 p.m., when they should muster for the evening meal. No work should be subsequently transacted. If the people are housed in large sheds, every such shed should be furnished with an oil lamp hung in the centre. In each shed one of the poor-house warders should sleep to maintain order and, so far as may be, decency. The people should retire for the night at any time they like before 8 p.m. At 8 p.m all should be quiet for the night. Each sleeping shed should be furnished with a *machân* of bamboos covered with earth. This *machân* should be about two feet from the floor. It should run round the sides of the building, and should be seven feet broad. Along the centre of the building there should be a passage about 10 feet broad. On this *machân* the people should sleep; it will be drier than the earth floor. Sleeping sheds should (where they are used) be about 24 feet broad and as long as may be required. The plinth of the earth floor should be two feet above the level of the ground. The shed should be thatched and have sides of mat or of bamboos or brushwood plastered over with mud. It should have one door. The ventilation should be at the top of the end walls and by a gap of about one and a half feet between the side walls and the thatch, which gap should have lattice work over it. A strip of gunny seven feet long, with a straw-stuffed roll at the end for a pillow, is recommended for bedding. The workers should have separate sleeping sheds from the non-workers, and males from females. Children should sleep in the women's sleeping shed, unless the relative in charge of them is a man. A person on first arrival should be allotted a sleeping place and should make resort thereto regularly. This place should, as far as possible, be amongst relatives or fellow castemen.

In a poor-house of separate huts and uncooked food, such as I have recommended, the only daily parade desirable would be a bathing parade; but after dark no person should be allowed outside the enclosure of his or her hut. But where that plan is not adopted, the gong calls during the day should be as follows: 6 a.m. getting up; 7 a.m. workers' roll-call; 8 a.m. bathing roll-call; 9.30 a.m. main roll-call preparatory to meal; 11.30 a.m. close of meal; 1 p.m. workers' roll-call; 4.30 p.m. roll-call for evening meal; 6.30 p.m. conclusion of meal; 8 p.m. quiet and sleep.

The native doctor of the hospital attached to the poor-house should daily, at the time of the morning meal, go through the poor-house people, pick out those who he may think should go to hospital, and prescribe special diet or medicine for such as he may think better to treat in the poor-house instead of in the hospital. He should also at this time examine the quality of the food supplied for the meal. After the morning meal is over all those for whom medicine may have been thus prescribed should attend at the dispensary attached to the hospital. The 9.30 a.m. roll-call should be the principal one of the day. It is then that new admissions should be made, and that persons should be selected for drafting on to the works. Every person should continuously wear his ticket round his neck. This wooden ticket should, as a distinctive mark, be painted white for those on special diet, red for workers, blue for non-residents. The only roll-call at which non-residents who are allowed to come for meals only need be present are the ones preliminary to the meals.

Where there is a large poor-house, and not a relief village, such as I have proposed, there would have to be separate sheds for work. Where the workers are not very numerous, the work could, for a great part, be carried on in their sleeping sheds. Spinning will be found the best sort of work for women. Other women should be employed on cleaning the grain. If any of the men are weavers, they may well be employed on weaving. Men, and such women as cannot manage spinning, may be advantageously employed on rope-making. Low-caste persons may be required to make baskets. Some of the men and women of appropriate caste should sweep the sheds and *leep* the floors and walls at appropriate intervals. The work exacted should, as far as possible, be by piece. A certain task should be allotted, with so many hours or days in which to complete it. If completed within the time, it should be remunerated in cash (in addition to the meals given) at such a rate as to give about one pice a day. If not finished within the time, a pice a day for the surplus time should be deducted from this remuneration. If all the remuneration thus vanishes, a deduction from the allotted meal should be made as a punishment for this laziness, or the person should be put on some more disagreeable task, or, in some cases, appropriate slight castigation should be administered.

The establishment required for a poor-house would be as follows: a superintendent on Rs. 30 to Rs. 50 per mensem. If the poor-house contains residents numbering 500 he should get Rs. 50; if 400, Rs. 40; if 300 or less, Rs. 30. He should be in charge of the whole poor-house as much as a jailor is in charge of a jail. Under him should be an assistant on Rs. 15 to Rs. 20, to assist him in writing up registers and in general supervision. The superintendent should give

security in Rs. 200. He would receive an advance of Rs. 200 from which to make miscellaneous purchases. On his accounts (to be submitted weekly) being passed, he would be recouped the amount so passed. The bill for the establishment pay would be submitted on the first of the next month to the civil officer under whom the superintendent is working. On being passed, cash to the amount would be forwarded, and before the next establishment bill is submitted a quittance roll bearing the signature of each member of the establishment against the wage thus issued, in token of its receipt, should be sent to the civil officer.

The rest of the establishment should consist, per hundred paupers where cooked food is issued, of two cooks on Rs. 6 each, one waterman on Rs. 5, four peons on Rs. 5 each, two male sweepers on Rs. 5 each, and one female sweeper on Rs. 5.

I think this will be found about the correct strength. If uncooked food is supplied, the cooks and watermen would not be necessary and the peons might be reduced to two.

The sweepers should clean the latrines, and should (if there are no relatives or fellow-castemen to do it) bury the dead. At the corner of each sleeping shed and just outside should be placed two earthen-pots and some dry earth protected from the rain. These should form the night privies. They should be cleaned by the sweepers early every morning. Under the orders of the superintendent the peons would keep order and convey money to and from head-quarters, &c. Special labourers should be engaged for fetching wood for fuel, or grass for thatching. Some of the stronger paupers should, under the supervision of the peons, remove the sick to hospital, clean the grain, and assist in sweeping the sheds and enclosures. The cooks should usually be Brahmins, and the watermen persons of a good caste from whose hands no one would object to drink. The watermen should not only supply water for cooking, but should fill the water-crock of each person at meal times whenever such a course is considered desirable.

When there are about 500 people in the poor-house, the cooking-room should be about 30 feet long by 10 feet broad, and should form a fourth part of a shed 60 feet by 20 feet, of which the other three portions should be utilized (1) for cooling the food—the cooked rice should be spread on mats for this purpose; (2) for cleaning the grain; (3) for storing cooking-pots, mats, pots or baskets for carrying food into the enclosures, and fuel. With considerably fewer than 500 persons, the size of the shed could be reduced.

The following registers should be kept up besides the stock register (*A.*) already referred to; extracts from them should be submitted weekly (on every Sunday morning for the preceding week) to the civil officer in charge of the operations in the tract in which the poor-house is situated. He should compile them fortnightly for submission to the civil head of the district:—

(*B.*)—*Daily register of persons relieved.*—(1) name of poor-house; (2) month and date; (3) number of persons relieved capable of performing some work [these must be classified into (*a*) male adults, (*b*) female adults, (*c*) males between 15 and 10 years of age, (*d*) females between 15 and 10 years of age, (*e*) children between 5 and 10 years of age]; (4) number of persons (not on special diet) physically incapable of labour (to be classified as above, with the addition of (*f*) children under 5; (5) number of persons on special diet (to be classified as in column 4); (6) total number of persons relieved (classified as in column 4); (7) admissions during day (stating the class to which they belong); (8) struck off during day (stating the class to which they belong); (9) died during day (stating the class to which they belong); (10) uncooked weight of grain expended in relieving (separately for those entered in columns 3, 4, and 5); (11) amount of other articles in the shape of condiments expended (separately as above); (12) remarks.

N.B.—The entries for each meal must be separately made.

In the column of "remarks" refer to the condition of the people, mention any mortality, any epidemic, whence new admissions come, their condition, on whose authority admitted, whither those whose names have been struck off have been sent, and what arrangements made regarding them. Columns 6+8+9−7 of to-day should equal column 6 of yesterday. The column of remarks in the weekly extract should also show the number of persons in hospital at the beginning of the week, the number admitted into hospital during the week, the number discharged, and the number of deaths which have occurred in the hospital during the week, classifying the people as in column 4.

(*C.*)—*Daily cash account.*—(1) name of poor-house; (2) month and date; (3) balance in hand; (4) amount received; (5) total receipts; (6) expended in payment of establishment; (7) in erection of buildings; (8) in purchase of clothing; (9) in purchase of fuel; (10) in purchase of articles mentioned in column 11 of (*B.*); (11) in cash payment to working paupers; (12) in purchase of materials for work; (13) miscellaneous expenditure, with specification of its nature; (14) total expenditure; (15) balance in hand; (16) remarks.

N.B.—All expenditure entries will have to be supported by vouchers; entries in columns 7 and 8 must also be supported by written orders authorising the expenditure.

(*D.*)—*Daily work register, raw material stock account.*—(1) name of poor-house; (2) month and date; (3) amount of material in hand, with a separate sub-heading for each sort of material; (4) materials received, stating whence and how; (5) total materials, with sub-headings as above; (6) issues (with details) (7) balance in hand; (8) remarks.

(*E.*)—*Daily work register, manufactured goods.*—(1) name of poor-house; (2) month and date; (3) amount of manufactured goods in hand (with a separate sub-heading for each description); (4) amount received during day (with sub-headings as above); (5) total manufactured goods (with sub-headings as above); (6) manufactured goods sold (with sub-headings); (7) manufactured goods utilized in poor-house (with sub-headings); (8) manufactured goods sent elsewhere, and where sent (with sub-headings); (9) total issues (with sub-headings); (10) balance (with sub-headings); (11) details of money realizations for sales in column 6; (12) remarks.

N.B. — Realizations by these sales should be forwarded with the weekly return. Issues in columns 7 and 8 must be supported by written authority for thus disposing of the goods.

(*F.*)—*Daily work register, cash remuneration.*—(1) name of poor-house; (2) month and date; (3) number of people at work, specifying how many (*a*) males, (*b*) females, (*c*) children, for each sort of work; (4) cash remuneration given for each sort of work; (5) remarks.

N.B.—Under "remarks" should be stated any information about the quality of the work done, any fines inflicted, &c.

All the registers must be signed daily by the poor-house superintendent, who alone should be held responsible for the accuracy of the entries. Every inspecting officer after thorough test should sign the registers.

Mr. Hewlett.—The grain should be purchased in the bazaar and brought to the poor-house, where it should be placed in a locked storeroom. One of the committee should take charge of the department, and attend to see the grain given out to be ground by working paupers. After being ground it should be collected, weighed, and sufficient for the day's supply given to the cooks. A morning statement should be signed by the medical officer, showing the number of the inmates who require special treatment, and the number of those who require food once, twice, or three times a day. These should wear a distinguishing ticket.

The flour should be mixed with water and kneaded, and baked in cakes over a fireplace, which should consist of an iron plate supported on mud walls, under which the wood is lighted. Twelve ounces of fuel per adult, and six ounces for children, is sufficient, and great care is required to bake the cakes *light*, and not tough and indigestible. A cake consisting of one pound of flour should not contain more than two ounces of water, less if possible. Great care should be taken to see that the grain is ground fine enough and that it is well sieved, and that the coarser particles are removed, or else diarrhœa will ensue.

When the dinner hour arrives, the paupers should be made to sit in rows, the men by themselves, the women by themselves, and the children by themselves. It is especially necessary to separate the children from their parents, and if possible they should be fed out of sight of their parents.

Each pauper should have served out to him on first arrival an earthen dish. Simultaneously with the bread a ladleful of dhall soup should be served out. It is best poured over the bread, and when that is finished, a pint of gruel (*ambil*) should be given.

The food should be eaten in the presence of one of the members of the committee, and none should be taken away. Cumblees and sarees might be given to those absolutely requiring them, but great discrimination will be necessary, otherwise the paupers will clothe themselves in rags to excite commiseration.

Work should commence at 6 a.m. and be continued till 11 a.m., when the labourers should knock off for two hours and have the mid-day meal. At 2 p.m. work should be recommenced and continued till 5 p.m. On every alternate day the labourers should be allowed to leave work at ten o'clock, in order to wash themselves and their clothes. The non-workers should be made to wash themselves every day, and certain of the labourers should be told off to wash their clothes.

The medical officer should attend not less than three times a week at the feeding hour, and make an inspection of all the labourers, so that any requiring to be sent to hospital should not escape notice.

The establishment required per hundred would be two cooks, five grinders, three for conservancy purposes, two sweepers at latrine, two bhistees (paupers), and three woodcutters.

The sick should be taken to hospital on canvas stretchers slung from a bamboo and carried by two men. Three men should be employed in burying the dead.

Mr. Spry.—A poor-house should always be supervised by a committee. If at the sadar station, the Collector, Judge, Civil Surgeon, and other officers, together with any native non-official gentlemen who like to undertake the duty, should be on the committee. If at a taluka station, the Assistant Collector, Mamlatdar, Medical Officer (if any), together with native gentlemen, should form the committee. At branch houses, the Assistant Collector, Mamlatdar, the Government local town or village officials and Soucars should form the committee. In all cases the Collector should be the final referee for orders and instructions.

At each relief-house there should be a manager and also a secretary, who generally should be Government servants. A storekeeper is also necessary, and other officials according to circumstances.

Each committee can and should resolve itself into various sub-committees for the carrying out of particular objects, and these sub-committees should consist of members who have particular knowledge of the subjects they have to deal with. For instance there may be—

1. The Commissariat Sub-Committee, who would arrange for the purchase of all grain and articles required and see to the storing of them.
2. The Finance Sub-Committee, who should look to the accounts and audit them.
3. The Sanitary and Hospital Sub-Committee, who would look to all matters appertaining to their peculiar department.
4. Kitchen Sub-Committee, who would look after the kitchens, &c., and so on. Sub-Committees can be made according as they may be required.

Each committee should meet as often as they think fit, but should be required to submit reports of proceedings at the weekly meetings of the general committee, when matters requiring discussion can be settled.

Besides this, all members should take it in turns to attend at stated times for the purpose of receiving inmates and of seeing the paupers fed, &c.

The food should be purchased by or through the Commissariat Sub-Committee every week, and stored under their supervision in some secure building. They should forward the bills, countersigned "as admissible" to the Finance Sub-Committee for adjustment. The storekeeper should keep a daily register of amounts received and served out and balance of stock in hand. There should be a separate register, although in the same book, for each description of article. The relief-house manager would report to the Kitchen Committee the number of people probably to be provided for next day, and they would make a written indent on the Commissariat Committee for the amounts of food required. The Kitchen Committee should see to the grinding, which should be done in a building or shed close at hand, and the flour weighed after being ground. The manager would keep himself informed, from the muster-rolls, of the number admitted or discharged, and from the number in hospital, of the probable requirements. The grinding should be done by women requiring relief, but who from having infants or from other causes are unable to go to the ordinary works, but they should be strong and healthy women. The blind and lame can often be well employed as grinders. The task should be 8 seers a day. The flour should be received in two instalments—once at noon and once in the evening; the allowance for wastage being 5 or 6 tolas per seer, the flour being weighed against grain. The bread should be baked on large iron sheets, as they economise fuel more than the common iron platters. The other food should be cooked in large copper pots properly and regularly tinned. The amount of fuel depends entirely on the kind obtainable. The bread produced from half a seer of flour should, when fresh, weigh 62 tolas. The bread and other cooked rations should be tested by the members of the committee who attend at the feeding time, as also by the manager.

Before the food is produced, the people should be made to sit down in gangs and in rows, men, women, and children all separate, except in the case of children too young to feed themselves. On them their mothers must attend, but they must be very strictly watched. The muster should be first called, then the food brought in and distributed regularly row after row. Care must be taken that those who have received their rations do not slip into other rows. The feeding must be always in strongly protected enclosures, with different doors for ingress and egress.

The children should be made to eat their ration at

once; and the adults to the extent of half at least if they are fed only once a day; if oftener, then they should eat the whole.

Clothes should be given when either decency or the weather show the necessity. Cumblis or blankets, costing from annas 8 to Rupee 1 each, may be given, as also the coarsest country cloth for saris.

All the paupers should rise at daybreak, and then an hour devoted to necessary purposes, &c. After the hour work should begin and go on to 11 a.m., when there should be the roll-call, and then the distribution of food. At 2 p.m. the horn should again be sounded for work, which should be continued till sunset, and one hour after that the people should all be in their respective dormitories.

The sick of course and very small children must be washed at the relief-house itself, and daily.

Personal ablution twice a week and washing clothes once should be rendered compulsory on all paupers, and they should be marched for the purpose to the nearest nullah or river, so many gangs each day. Children should be washed daily.

The medical staff should at feeding time always attend and look at the paupers. They should also go the round of the sheds the first thing in the morning and the last in the evening. The muccadum of each gang should also send to hospital anyone suddenly taken ill.

Rope, net, and basket making is suitable to old and infirm men. Spinning and cleaning grain is most suitable for women and girls not strong enough for outdoor labour.

It is very difficult to get any task out of relief-house paupers. Supervision and having regular hours for work is as much as can be done. Those who do not work properly can be put to some description of work which they do not like, and thus punished.

The establishment required for 100 paupers is about as follows:—

4 cooks.
7 grinders.
5 sweepers.
4 water carriers (dependent on situation of water).
4 latrine cleaners and trench diggers.
2 muccadums or supervisors.
2 dhoolie bearers.
2 grave diggers and corpse bearers.

The first four classes can be selected out of the paupers, but I think the last four classes had better be people specially employed and paid full wages, strong men being selected. Old pensioners, if obtainable, make good muccadums.

There should be the—

1. Daily cash book.
2. Stock register (already described).
3. Muster-rolls.
4. Register of entries and dismissals.
5. Register of entries into hospital.
6. Birth and death register.
7. Register of paid establishment.
8. Register of work done, such as spinning, &c.

I should have added above that I think the fetching of grass and wood should not be done by the paupers; it is better to buy that in the open market.

Also that the children, the sick, and people under special treatment should be fed twice or even thrice a day under the instructions of the medical officer.

Colonel Anderson.—This very pregnant question I cannot attempt to answer in full detail; many of the points of detail are beyond my experience. I would, however, note that to children and sickly people food should never be given in the form of chupatees, which are often ill-baked and are always indigestible. Grain food should always be given to such classes in the form of pudding or stiff porridge. I found the greatest advantage result from changing from chupatees to pudding in these cases. It stands to reason that the food is more digestible in this form and therefore goes farther, and is alleviative if not entirely preventive of the diarrhœa so common among famine people, children especially. The ration of food should always be required to be eaten at the time it is served out, and should be given in two feeds a day to adults and three to children. The paupers should be required to do all the work of the relief-house with an addition of ¼ to the ration of those from whom duties involving any amount of real labour are required. All should every two or three days, at least, in the warm part of the day be walked out to any wet nullah or river in the vicinity and required to wash. A barber should be kept in the relief-house. One can generally be procured for his food, and all men's and children's heads be shaved, and those of as many of the women as desire it, which many will do, or at least to have their hair cut short. The officer in charge of the relief-houses should test the weight of the rations daily. This is a point of great importance, as from fraud or error mistakes are very liable to occur. As to amount of supervising establishment I have no notes, but selected men among the paupers may be usefully employed on many minor duties of this kind, giving those selected for this purpose an additional ¼ ration.

MADRAS.

Surgeon Gray.—The cheapest grain of the grains the paupers are accustomed to should be purchased by Government and stored up in a granary. It should be in charge of the grain depôt keeper, who should keep a register showing receipts, issues, and balances. This should be inspected from time to time by the deputy collector, assistant collector, or a Revenue official.

A person ought to grind 50 seers (of 84 tolas) per diem.

The food should be cooked in large copper vessels capable of containing 50 seers of grain. Copper vessels are essentially necessary for cooking when there are large numbers in camp and hospital. When there were nearly 1,500 paupers in the camp and hospital at Peapali, Kurnool District, the superintendent encountered very great difficulties in the department. According to orders of the collector he had to use earthen vessels. Under these circumstances food could not be prepared at the appointed hours. Food which should have been ready at between 8 and 9 a.m. was not ready until 12 noon and 1 p.m. The evening meal was proportionately late—6.30, 7, 7.30, 8 p.m. The cause of these difficulties was the earthen vessels, which could not be obtained large enough and strong enough. They were constantly breaking when on the fire-place. Moreover, food is boiled more quickly in metal vessels, because metal absorbs heat rapidly and parts with it slowly. When there are only 200 or 300, or even 500 in a camp, earthen vessels may be used. It is *not* economical to use earthen vessels in a very large camp.

Regarding the amount of water that rice and cholum require for boiling and the weight of 7 lb. (16 oz.) of each of these grains after boiling, I have ascertained the following by getting them boiled in my presence:—

Rice, 16 oz. require 56 oz. of water, and when boiled well no water remains in the vessel; the boiled rice weighs 54 oz.

Cholum, 16 oz. require 30 oz. of water; the boiled cholum made into a ball weighs 32 oz.

The superintendent should test the food. The food should be distributed to the people in tin measures made to contain a certain fixed amount of cooked food. The food should always be distributed *dry*, and not in water—as congee-water and rice—for in the Chingleput relief-camps I had occasion to bring to the notice

of the sanitary commissioner that when food is distributed in this manner each person does not receive the proper amount of rice. Some receive *more* and some *less* than others. I might here mention that the dhall allowed to paupers should be cooked separately and not in the pepper-water, for in the Peapali relief-camp I have found that those first served get plain pepper-water, and those last served a large quantity of dhall, which must necessarily be the case, for the dhall will gravitate to the bottom.

While food is being served out and eaten great discipline is essential. The paupers should *sit* in lines in enclosures devoted to the different castes. They should not be allowed to *stand* up and yell for food. They should be made to eat their food on the spot, and not be allowed to take food into their sheds. Children who can walk should be arranged in lines away from the adults, and a warder should see that they eat their food and do not give it away to their parents. This is the plan adopted in the Peapali relief-camp hospital, and I find it answers its purpose.

During the close of the famine (as at the present time) when there are rains and cold winds, those who have no coverings should be supplied with gunny-bags and blankets. In the Peapali relief-camp we got the gunny-bags for nothing from the Government granary. A blanket costs between 14 annas and 1 rupee each. We divide this blanket into two pieces. Half a blanket is found ample. About 8 annas would be the cost *per head* for warm clothing.

In the hot weather paupers should rise at 5 a.m., in cold and rainy weather 6 or 6-30 a.m. They should bathe during the day. The roll-call should be between 7 and 8 a.m. Food should be distributed at 9 a.m. At 6 p.m all the paupers should be ordered into their sheds.

Near the latrines there should be a large bathing enclosure, where the paupers should be made to bathe and wash their clothes.

The medical officer should hold a general inspection of all the paupers two or three times a week, and weed out those who are beginning to sicken. Those paupers in the camp who are not sick enough for hospital may be mustered in the camp every morning for a dose of medicine or tonic. Those paupers who are suffering from trifling ulcers, which if neglected will become bad ones, should be collected and marched off daily to the hospital, in order to have their ulcers dressed. Dressing once a day for these cases is quite sufficient.

Paupers can be set to the following tasks :—

1. Sweeping.
2. Weeding.
3. Cleaning grain.
4. Grinding corn.
5. Cook-helps.

Women for cleaning and grinding corn and as cook-helps.

Men for sweeping and weeding ; women also, and children.

Paupers who are considered fit to do the camp work above enumerated and who will not do them should be punished, not by depriving them of food, a portion of their daily allowance, but by tying their hands up to a post fixed in the middle of the camp, so that they may be seen by all, and that other paupers might be warned. A pauper does not like to be tied up for an hour or two. This is the only punishment that can be awarded to a pauper. I have found this punishment useful in deterring paupers from defecating anywhere and everywhere in the camp. This punishment will also be useful in making lazy paupers work.

Establishment per 150 paupers.

When there are about 1,000 paupers in camp—

One cook.

One sweeper (if paupers are not strong enough for this work).

One toty.

One warder (if 50 paupers are hutted in each shed, then one warder can be put in charge of three sheds).

One waterman.

The sweepers and toties can remove the sick to hospital. This is done in the Peapali relief-camp.

The establishment for carrying out and burying the dead depends on the mortality in the camp. If ten people die daily, four to carry and four to dig and bury will be found sufficient.

The above menials should be paid 6 rupees *per mensem without food* in the camp, but as they generally manage to get it, it would be best to pay them 2 rupees and give them food in the camp.

Major Baynes.—A poor-house must be divided into two branches; one allotted to ordinary inmates, who are persons not requiring a special diet or medical treatment; the other to those who do require special diet or medical aid. The former portion will be styled the "ordinary" poor-house, and the latter the "hospital" poor-house. Both portions must be further subdivided by a slight fence; one division should be set apart for the accommodation of caste inmates; the other should be assigned to pariahs.

Each of these subdivisions must be further divided into two portions ; one to be occupied by the huts, which may be styled the "sleeping quarters," the other to be used for the issue of meals and for exercise, which may be called the "feeding enclosure." In the "sleeping quarters" families, single men and women, boys and girls should be put into separate huts; these huts should not be occupied during the day except in rainy weather.

The feeding enclosure must be divided by fences into three portions, in which men, women, and children over two years of age will be respectively fed.

To render the arrangements perfect, long sheds without side walls should be erected in the feeding enclosure ; otherwise heavy rains at meal times not only cause great inconvenience, but much sickness in the form of fever, resulting from severe chills ; there were none in my poor-house, nor have I seen them in any other, but the want of them was a serious defect. One hundred people require an area of 140 feet in length by 14 in breadth in which to sit at meal time ; the cost of shelter at meal time would be about 4 annas per head. I would strongly advocate its provision.

All persons presenting themselves for admission on production of their ticket should be at once taken by the gate-keeper to the medical officer in charge, who after inspection tells them off either to the ordinary or hospital portion; in both cases he will send the tickets to the master for entry in the general register. He should receive back from the master the tickets of such persons as he detains in the hospital, with the general register number entered on it for entry into his own hospital register. Persons brought there by the police or camp patrols would be passed in without tickets; should any persons arrive after issue of the evening meal, whom the medical officer considers fit for the ordinary camp, he will detain and feed them in his general or convalescent ward, and send them to the master on the following morning. Persons brought in without ticket must be supplied with one by the medical officer, which he will send to the master for disposal according to instructions given in the case of ticket-holders.

Assuming 1,200 as the maximum number of inmates, the following fixed establishment will be necessary :—

		RS.
1	House master on - - -	50
1	Medical officer of rank of passed hospital assistant.	
1	English writer - - -	15
2	Dispensers on - - -	10 each.
2	Store-keepers on - - -	20 „
2	Orderlies - - - -	6 „
2	Gate-keepers on - - -	5 „
13	Warders on - - - -	6 „
1	Writer for camp master - -	15
1	Head constable and 4 privates.	

The strength of the establishment given below will vary with the number of the inmates :—

Gangsmen.—One to every one hundred inmates, pay Rupees 8.

Scavengers.—Two males to every one hundred inmates of the ordinary poor-house, and two males and one female to the same number in the hospital portion.

For any fraction of 100 more than twenty-five and less than fifty, one additional scavenger; and for any fraction over fifty, two scavengers.

Adults and children over two years should be divided into feeding gangs of 100 members ; each gang must be of the same or equal caste ; the adults should be further sub-divided into sexes ; this is impracticable in the case of children, as very little ones must go with their bigger sisters or brothers ; further, members of gangs must all receive the same ration ; inmates on twenty ounces must be separated from those on twenty-four. To each gang must be appointed a gangsman other than an inmate, he must read and write the vernacular of the taluk ; he will keep a nominal roll of his gang. He will be present at the issue of raw rations to his gang cooks ; he will muster his gang at the first meal-drum in the space assigned to it; call the roll and give in to the master a report in form; he will be also present during the issue and consumption of the cooked food, and will see that each member receives his proper ration ; he will maintain order in the ranks during meals, and will prevent any food being taken away ; gangs should be made to sit down in ranks of fifty facing inwards, with an interval between them of eight feet to afford a passage for the food distributors ; in the hospital portion gangsmen are only required in the convalescent ward.

In other wards of the hospital than the convalescent it will be necessary that the female patients should be attended by female scavengers ; their strength must be regulated, not only by the number of patients, but by the nature of the prevalent disease, and its determination must be left to the discretion of the medical officer subject to the approval of the European relief officer. At 5 a.m. the scavengers will remove the night chatties and clean out the latrines, and in the evening they will replace the chatties and again cleanse the latrines, and fill up the latrine water-pots. During the day they will remove the sweepings from the enclosure and will be employed in digging pits for reception of nightsoil.

Burials.—There should always be four vettyans attached to the hospital portion to remove and dispose of corpses, either by interment or cremation, unless the deceased has friends in the poor-house or outside who are willing to perform the funeral rites of his caste. The usual fee for cremation is one rupee ; for burial eight annas. They should be paid at the kacheri on voucher furnished by the master.

Cooks.—One male and three females to every gang in the ordinary poor-house and in the convalescent ward ; they must be strong and willing, for their duties are hard ; they have to clean, cook, and distribute the rations twice a day to 100 persons, and to cleanse their cooking and eating utensils ; they must be caste people ; if procurable, Vellalahs are the best, as all castes, except Brahmins, can eat food cooked by them, and so by employing them one of the causes which make the poor-house distasteful is removed. This of course entails payment of the cooks, but I am of opinion that the employment of inmates as cooks is objectionable ; they are, as a class, *filthy* in their habits, not sufficiently intelligent and rarely strong enough, and if they be strong enough, then they are able to go to a relief-work ; the cost of paid cooks is a mere bagatelle ; it does not exceed 2½ annas per mensem for each inmate. They should receive their food, and in addition a money-payment of 1½ annas per diem to males, and of 1 anna to females ; this would not be paid daily, but as a monthly wage, and would be liable to deduction by fines for bad conduct or by stoppages to make good a short delivery of rations.

Water-carriers.—Should be selected for carrying drinking-water from the caste ordinary inmates ; their duty is to fill up morning and evening the filter pots in the sleeping quarters and feeding enclosures and to supply the cook-room ; they will do this work for both branches of the poor-house. The pariahs can be employed in filling the pots in their own enclosure, but they should not have any connection with the kitchen-pots ; and the draw wells for use by pariahs must be distinct from those used by the caste people ; filters constructed out of three pots on a bamboo tripod should be placed at the end of each hut nearest the central partition ; at the cook-rooms and also at the corner of each feeding enclosure one filter of the ordinary dimensions for every fifty persons will be required.

Sweepers of the poor-house ; areas.—Should also be taken from the females and girls of the ordinary poor-house and convalescent ward of the hospital ; every morning on return from latrines they will sweep up the whole area of the ordinary poor-house under the superintendence of a warder, and also the feeding enclosures after each meal ; all rubbish collected should be deposited outside the enclosure in one spot, whence it will be removed by the scavengers. This duty will be performed in the contagious wards of the hospital by the scavengers.

Purchase, Issue, and Storage of Food.—It will, I think, be granted that the objects to be sought in the adoption of a system for the supply of grain to recipients of charity are the regular delivery of a sufficient quantity of wholesome grain, combined with the least outlay of money ; if these results can be obtained by dealing with local grain-sellers, I would advise the daily purchase from them of the daily requirements, for thereby the necessity of providing storage and the opportunity for peculation are limited ; but my experience shows that the adoption of this course is calculated to keep the price of grain needlessly high, because native traders will combine but not compete, and the cost of feeding the inmates of poor-houses was certainly enhanced by the monopoly of supply held by them. I only had one small importation of rice direct from Madras in the height of the famine. The saving on each bag was about 1½ rupees, and local prices fall immediately but only temporarily. I am therefore of opinion that, if Government were able to supply their own poor-houses with grain, they would reduce their cost, but it must not be undertaken unless it can be carried through to the end.

On the assumption that the supplies are to be locally procured, I would recommend the following system :—On the evening of each day the master and the medical officer furnish their storekeepers with indents, for the amount of supplies required for their respective portion on the following day ; these indents should be framed upon the number of inmates shown in the state reports of the date of indent with a margin of 5 per cent. in excess to meet admissions during the next 24 hours ; these indents should be filed and checked in the tahsildar's office weekly by comparison with the daily state reports, which in their turn are checked by comparison with the gangsmen's nominal rolls ; copies of these indents should be filed by the master and medical officer.

At 6 the next morning the store-keepers bring to the poor-house and hospital store-rooms the amount of supplies specified in the indents given to them the preceding evening ; the articles are weighed or measured before the master and the medical officer, who attest the accuracy of their respective deliveries by affixing their signatures to the back of their indents which are given by the store-keepers to the contractor, who, on production of his account with these indents as vouchers, receives the amount due to him every Saturday at the tahsildar's or deputy tahsildar's treasury ; the prices of the articles supplied should be determined by the contract to be the same as those officially quoted in the tahsildar's grain report on day of payment.

The master and medical officer then receive the

rations actually required by them for the morning meal, and they sign the store-keeper's register in proof of receipt, and the same process is repeated at 2 p.m. when the evening rations are drawn. The surplus that remains is very small, and is taken into stock by the store-keepers for subsequent distribution during the day if required on minor indents; for these subsequent issues they will obtain every evening, when they receive the indents for the next day, the signatures of the master or medical officer as the case may be, and their accounts must be made up and balanced every evening; every Saturday any surplus that has accumulated during the week is utilised and removed by a corresponding deduction made from the indents given on that day by the master and medical officer for supplies required on the Sunday. For example, if the master required 100 lbs. of rice on Sunday and his store-keeper's register showed 20 lbs. in stock, he would give an indent for 80 lbs. only; in this way the accumulation of stores is limited to a week.

Contingent Charges.—There are other minor supplies to be made, cooking pots, fire-wood, sulphur for fumigation, &c. The simplest method of supplying fire-wood is to allow a fixed daily sum for each 100 inmates. I found that 2 annas daily for wood and 1 anna for cooking and water-pots for each 100 was the average; it is only 10 pies per head for a month. Other contingent charges are very trifling, and can be safely left to the master or medical officer, who should be provided with a permanent advance of 10 rupees, the account of which will be kept by the store-keeper.

There is no occasion for a task, as the grain for each gang is given out by the master and medical officer to the female cooks of each gang; this is done in the morning and afternoon; the grain required for the morning meal is given out at 7 a.m., that for the afternoon at 3 p.m. in presence of each gangsman; the correct appropriation of the stores required for use in the hospital wards where patients cannot be fed at regular times and with fixed quantities must be left to the honesty and vigilance of the medical officer and his dispensers. The females husk or grind the grain, as the case may be, in the cleaning hut, which is simply a roofed in space without walls; no pots are allowed in this shed; one of the police guard should be present during the operation to prevent the cooks carrying grain away, or the ingress of other persons into the shed. As soon as the grain is reported ready for cooking, the master and medical officer (or, if engaged, one of his dispensers) see the grain and condiments measured into the pots of each gang or ward; the gangsmen should be present at this operation. When cooked, each gangs-cook turns it out of his pot into large shallow baskets, in which it is allowed to cool slightly, and, if balled in boiling, is stirred about with a stick to separate the grains.

Cooking Vessels.—Earthen vessels were always used; they are objectionable, because it is difficult to clean them, because a considerable portion of the rice sticks to their sides, and because they are so liable to fracture, and are so awkward to move. I have frequently seen a heavy pot full of boiled rice smashed in the act of lifting it off the fire, and sometimes the bottom comes out from the mere weight of contents. I would advocate the use of degchis with handles, they should hold 38 measures of raw rice and seven gallons of water; two such pots and one containing six measures of dhall and 12 gallons of water would also be required for each gang of adults.

Issue of Cooked Rations.—At a quarter of an hour before the meal time a drum is beaten. The gangsmen should then go to the spaces assigned to their respective gangs in the feeding enclosures and call their rolls; as soon as they are assembled the gangsmen will hand in to the campmaster their reports, the gangsmen will then go with some members of their gangs to fetch the eating utensils; these are bowls which will hold twelve ounces of rice when boiled, and half pint mugs, both made of tin; as soon as these are distributed the second drum is beaten, then the cooks of each gang bring out their rations, which they distribute; they are furnished with tin measures which hold respectively the rations of rice and condiment soup. The rice is carried in a large open basket by one or two of the gang and the male cook serves it out; the condiment soup is ladled out by the female; care must be taken to see that the dholl is not allowed to drop to the bottom, which it will do if not bruised into flour: the recipients prefer it separated from the condiment soup, as they can see what they get; but the most wholesome mode of giving it is, after it is boiled soft, to grind it into a paste and then put it into the condiment water to make a pea soup. As the rations are given out to the gangs by their own cooks, the responsibility is limited to them, and should any deficit exist it is at once made good by a minor indent on the store-keeper, and the cost is recovered from the pay of the cooks; the gangsmen should supervise the issue of each ration, and it is their duty to report at once any deficiency. The only way of securing to the children their full ration is to feed them apart from adults, which was always done.

Eating Utensils.—The use of tin eating-vessels is very desirable. It is impossible to cleanse earthen ones, and they are constantly broken. Inmates should not be allowed to keep their own eating utensils; they never wash them, and the smell, besides being unpleasant, attracts swarms of flies; the putrid matter in them renders the fresh food unwholesome, and it is a common sight to see the end of a dirty body-rag doing service for a plate. The only difficulty about the use of tin vessels consists in the certainty of their being stolen, unless great precaution is taken. They should be supplied to gangs on the indent of the gangsmen countersigned by the master; when any member of his gang leaves he should return them into store, getting a receipt for them, those that are in use will be in the charge of the gang servants; after the evening meal, they will be placed by them in a shed set apart for their reception and for that of the gangs' cooking pots; this shed will be locked by the store-keeper and be under police guard at night; for the eating vessels of each gang, strong bamboo baskets should be provided into which they should be placed; if any vessel is missing at meal time the gangsman will report to the master; after each meal he will personally see that the gang-cooks get back the proper number.

Warm Clothing.—Cumblies or blankets should be given to hospital patients at the discretion of the medical officer; as a rule, very few of the inmates are accustomed to any other clothing than their cloths; gunny or rice-bags make very good bedding, but in the ordinary poorhouse the dry floor of the hut is sufficiently comfortable, and is what the majority have laid on all their lives; but inmates on arrival generally come half naked; their rags should be taken from them and burnt and a cloth given. A very serviceable woman's cloth can be obtained for 14 annas to 1 rupee, and a man's cloth for 1 rupee; each cloth must be marked with the "broad arrow" or they will be stolen. When an inmate is discharged from camp, this cloth should be taken from him, washed and kept for issue to a new arrival, and an unmarked one should be given to the out-goer. This account should be kept by the master.

Hours of Rising, Feeding, &c.—The rouse should be sounded at 5 a.m.; all inmates in the ordinary camp and in the convalescent ward will then be turned out to the latrines by the warders on duty; when they vacate these, they will be escorted by the warders coming on duty and a police constable to the place set apart for ablution; at 8 a.m. they should return to the feeding enclosure; at 8.45 the first drum is beat, they then fall in by gangs as already described; after breakfast the labor gangs fall in under a warder and constable and go to

work; the sweepers sweep up the camp enclosure; the water-carriers fill up the filters and supply the cook-room; those gangs whose turn it is to wash clothing go under a warder to the place set apart for this purpose; all inmates should return at 4 p.m.; at 4·30 p.m. first drum for evening meal is beaten, after this meal the enclosure is swept up; at 6 p.m. the inmates fall in by gangs for roll-call, and they are then turned into the sleeping quarters.

N.B.—Cloths need only be washed once a week; this should be done by gangs.

Sickness.—As before explained the warders on duty should find out and report all cases of sickness to the master; a couple of blanket doolies should be ready at his quarters. In ordinary cases of sickness some of the inmates should be made to carry the sickpers on if unable to walk; but in cases of cholera they will not approach the patient, and it will be necessary to send for the hospital dooly-bearers or vettayan.

Work on which inmates can be employed.—This will, of course, be of a very mild description; as already stated, they can be employed on supply of water, sweeping enclosures, repair of fences and huts; the only outside labor is cleaning out drinking wells or breaking metal; but this latter is a costly amusement if the stones have to be brought from any distance, because I would not allow the gangs to go far from the poor-house, otherwise they will certainly desert, because the guard that can be supplied is not strong enough to prevent them, and if they are seen working under strong guards like prisoners the effect on outsiders is very bad and not calculated to encourage an hesitating applicant.

Ch. III. Qn. 27.

Madras.

Registers and Returns.—General register of admissions.

Register of admissions into hospital.

Account of receipt and issue of stores on indents to be kept for ordinary and hospital portions.

Nominal rolls of inmates.

Contingent accounts of store-keepers.

Daily state.

Eating utensils.

Cloth account.

N.B.—There are several minor forms, to describe which here is needless.

Difference between a poor-house and relief-camp hospital.—The main difference is this, that in a relief-camp hospital there should not be any cases of emaciation or of chronic sickness. The only diseases in it should be those which arise on the work and require prompt and short treatment; further, the medical officer in a relief-camp would be responsible for its general sanitation.

Question 28.—Poor-house Hospital Arrangements.

Ch. III. Qn. 28.

Refer to the questions regarding a hospital attached to a relief-work, and consider how far the arrangements suitable for such an establishment would also be applicable to a hospital attached to a poor-house. If any difference of system seems desirable, state in detail what seems requisite.

Replies not summarised.

Punjab and North-Western Provinces.—Hospital accommodation should be provided for 20 per cent. of the inmates of a poor-house. Particulars given.

Bengal.—The poor-house hospital may be under the same rules as that on a relief-work.

Bombay.—No difference of system is recommended.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

Dr. Hilson.—Every poor-house containing upwards of 200 inmates ought to have a hospital of its own, because about 20 per cent. are likely to be sick or to require medical assistance in one form or other.

If the poor-house is intended to contain less than 200 inmates it ought to be built, if possible, near a dispensary, so that the hospital assistant could attend to the sick in addition to his other duties.

The sick can then be treated in the poor-house, one portion of which should be set apart for them.

When the inmates exceed 200, a hospital assistant with a competent staff of compounders and dressers should be appointed to take charge of the sick.

An ordinary hut, such as has been already described, forms a sufficiently good hospital; but in summer it should have walls on each side made of sirki, with a space of about one foot left open at the top, to ensure free ventilation.

In winter grass mats plastered with mud should be substituted for the sirki. Each patient should have at least 40 superficial feet if possible, and not more than 20 patients should be accommodated in one hospital hut.

It would probably cause too much expenditure if each patient on admission were provided with new clothes, although such a step would contribute greatly to the cleanliness of the hospital and the comfort of the patients; but care should be taken that the clothes which the paupers bring with them are washed when dirty and renewed when much torn. Every patient ought to have one blanket in summer and two in winter, and a supply of dhotis, saris, and blankets should always be available at the poor-house for use in the hospital.

It would manifestly be impossible to give a charpoy to each patient, but a few might be kept in the hospital for special cases.

The bedding should consist of straw or dry grass, and a large supply should always be available at the hospital to replace what becomes soiled by the discharges of the patients.

If the majority of the patients are of low caste, which is usually the case, Musalmans will be found the most suitable cooks to employ; but there ought to be one Brahman cook, or more according to circumstances, with a separate cooking-place for those who object to take food cooked in the general kitchen.

There ought to be one sweeper for every 25 patients in the hospital. If many diarrhœa cases are under treatment one sweeper to 20 patients will not be too many. Within 40 yards of each hospital there ought to be a latrine formed of grass or bamboo mats kept upright by wooden posts. These should enclose a space about 16 feet long by 10 broad. No trench should be dug in it, and the sweepers should remove by means of khurpas and phaurahs all excreta, and throw frequently on the ground some dry earth, a supply of which should be kept in the neighbourhood.

This is by far the best form of a latrine for a pauper hospital.

Every eight or ten days the latrine should be removed to an adjoining site, and if the earth on which it has stood be removed to the depth of six inches and replaced with fresh earth, no disagreeable odour will be emitted. The use of McDougal's disinfecting powder should be prohibited, because it conceals

Ch. III. Qn. 28.

North-Western Provinces.

objectionable smells, and consequently their source may escape observation.

Gumlas or shallow earthen pans, into which loose earth has been cast, should be placed on each side of the huts at intervals of three or four paces and distant about 8 feet from the hut. These can be used by patients who are unable to go to the latrine.

The ground in the neighbourhood of these gumlas must be removed periodically as it becomes foul.

There ought to be one bearer attendant to nurse every 20 patients.

Care should be taken that these attendants are all strong healthy men, that they have no caste prejudices, and that they are not the servants or protéges of the native doctor or other official.

It is their duty to feed the very week and emaciated, to see that the patients are kept covered with a blanket, and to lift them and assist them to reach the gumlas when they wish to resort to them, &c., &c.

Bhistis should be provided in the proportion of one to every 80 patients, or according to circumstances; a few of them ought to be Kahárs; and every patient ought to have a small earthen drinking cup.

It should be borne in mind in estimating the number of the bhistis required that they have to supply water for the purpose of washing the dirty clothes of the patients.

Separate hospital huts should be erected for the reception of patients suffering from cholera or small-pox. These ought to be placed at a litttle distance from the others; but if they are placed too far off the patients run a chance of being neglected. Cholera in India is a very feeble (if at all) infectious disease, while small-pox is a disease of children, from which the great majority of the adult population in India has suffered. Both the cholera hospital and the small-pox hospital may be placed within the general hospital enclosure; the only precaution necessary is to appoint one of the attendants to prohibit children from going near the hut in which the small-pox patients are treated.

This end can also be attained by placing a *jaffrey* fence round the hut. A sweeper should also be appointed whose sole duty it is to bury the discharges of the cholera patients.

The civil surgeon will supervise the hospital assistant, and when there are several poor-houses in the district he ought to be assisted by an assistant surgeon especially appointed for the purpose.

The officer of the Public Works Department and the civil officer should interfere as seldom as possible with the medical arrangements, and it will usually be enough if they bring to the notice of the medical officer any dereliction of duty on the part of the hospital assistant.

Dr. Prentis.—Hospital accommodation should, considering the amount of sickness likely to occur in a poor-house, be provided, in my opinion, for 20 per cent. of its inmates. The hospital might consist of thatched sheds similar to the other sheds of the poor-house, only provided with grass tattis to keep out the cold and rain. As bowel complaints are always more or less prevalent in poor-houses in this district, it would be advisable to give to each patient a superficial area of $4 \times 7 = 28$ feet. Clothing and bedding should be issued at the discretion of the medical officer. Brahman cooks in the proportion of one cook to every 33 sick should be attached to the hospital, and the meals issued at least twice a day. A hospital assistant and compounder, water carriers and sweepers would also be required. The nursing might generally be done by some of the paupers. In addition to the ordinary hospital it would also be very desirable to have a shed at some distance from and to the leeward of the poor-house for the accommodation of patients suffering from epidemic disease, such as cholera or small-pox. The hospital assistant in charge and the hospital would of course be under the control and supervision of the civil surgeon.

Dr. Deane.—I would have both hospitals on exactly the same footing. The sheds should be made of sírki and be on raised chabutris as I described for the ordinary huts. I would, however, make a difference in the size. No hospital hut should be made for more than eight or ten patients: nearly all the cases are bowel complaints, and after a time (*with the very best management*) the stench is awful. The ground, too, gets polluted and it is absolutely necessary to change the sheds often to clean and dry them again. It is not often they will all be full, and you can change from one to another. No man who has not taken a personal interest in the matter knows how difficult it is to manage such people. They fight against taking medicine, eat any garbage they can get hold of, and will not take the trouble to use a proper vessel to relieve their bowels in, but soil their clothes and blankets as they lie. I never experienced a more heart-breaking task than trying to keep the hospital in order. If the sheds are made about 12 feet broad and have one side constantly open it will answer well. I have now some sheds erected in that way, and they make an admirable dry weather hospital, and a very fair cold rainy weather one.

Bengal.

BENGAL.

Mr. Kirkwood.—I think the hospital arrangements contemplated in my reply to Question 14 would suffice in the case of a poor-house hospital. I would add that in either case, on application being made, a relative should be allowed to sit by and attend on a sick person, by special permission of the medical subordinate in charge. This relative would get no meals in the hospital. I would also note that in the case of poor-houses it will generally be necessary to have a couple of sheds apart from the main hospital for the treatment of cholera and small-pox cases. This would not, I think, be necessary in the case of the hospitals on the earthworks.

A native doctor should be in charge of the hospital if the poor-house contains 400 or more; otherwise, probably a dresser would suffice, subject to weekly (or more frequent) inspections by the native doctor of the circle.

The native doctor (or dresser) would have to keep up registers to submit therefrom weekly extracts to his superior medical officer, who should check, test and countersign, or object, and act in the manner set forth in my reply to Question 14. The native doctor would at the same time forward a copy of these weekly extracts to the civil officer in charge of the relief operations in that circle. The registers should be similar *mutatis mutandis* to registers A, B, and C which (in answer to Question 27) I have said should be kept up by the superintendent of the poor-house.

The grain received would be that handed over to the hospital by the poor-house superintendent.

The native doctor should have an advance of Rs. 50 from the civil office for miscellaneous food expenses.

In register (B) columns 3 and 4 would be admitted, and so would columns 11 and 12 in register (C).

The native doctor would submit his establishment bills (through his medical superior) to the Civil office precisely as the superintendent of the poor-house for his establishment.

BOMBAY.

Mr. Spry.—I think that whether a hospital be attached to a relief work or to a poor-house, exactly the same system should be carried on at both of them. There should be no difference after people are admitted into hospital. At the poor-house it will probably be possible to make the buildings of a more substantial character.

MADRAS.

Dr. Lancaster.—With reference to a hospital in a poor-house, I am of opinion that the *whole* poor-house may be considered (from our experience of relief-camps at present) as practically a large hospital. The relief-camp may be called the "Taluk Hospital," for it is that practically. By far the large majority of inmates require treatment of some kind. Still there should be separate hospital sheds, into which all serious cases are to be treated. All slight cases may be treated as out-patients, these to live in what may be called convalescent sheds. The camp will thus be divided, as it were, into two large parts, viz.:—

(1) The hospital proper.
(2) The convalescent sheds.

The medical subordinate will treat the patients in hospital in the hospital sheds, the other patients (classified as out-patients) to be treated every morning, say at 8 o'clock, at the dispensary shed. These slight cases need not then be detained in hospital. All the inmates should be examined every morning; cases of dysentery and diarrhœa should be removed to the camp hospital.

The hospital sheds are best built with mud walls 3 feet high, and leaf roof. The eaves should project well over the wall to keep off the rain. There will be ample ventilation by perflation if this is done.

Refinements of sanitation are not required in relief-camps. The medical officer (Zillah surgeon) should be consulted in all sanitary matters. Non-professional officers are apt to have theories of their own regarding sanitation, and as these officers are often changed in the course of duty, these individual theories then affect the camp, and often detrimentally.

The floor of the hospital should be raised about a foot high; this keeps the inmates from the damp. Do not use cots of any kind; these become dirty soon, harbour vermin, require bedding, and are a nuisance in the long run. A mud pial answers well; he is accustomed to it; let it be cow-dunged regularly and kept clean.

Bedding.—A cumbly and a good gunny will be sufficient. These are easily washed and cleaned. As many of the inmates are admitted in mere rags, a cloth (common coarse one) should be given to each. With constitutions impaired and vital powers reduced to a minimum, these unfortunates cannot withstand the cold. One attendant to every twenty patients is sufficient. All of them will be under the control of the medical subordinate. The medical subordinate will be responsible to the officers in charge of the camp—the collector and the Zillah surgeon.

The medical subordinate must be ordered to follow recognised and standard modes of treatment in all cases. All dangerous and scarce drugs should be religiously avoided. When he is in doubt he should consult the nearest surgeon if possible. A large number of medicines may be bought on the spot from the nearest bazaar. Some of the indigenous drugs are extremely valuable.

He must have a small surgery to keep bottles, medicines, and stores; a shed 20 × 20 feet will be ample.

He must reside on the premises; it is a *sine quâ non.* An active, intelligent man is essentially necessary. If there is the slightest tendency to laziness or illness, the sooner he is removed from the camp the better. His returns must be regularly and punctually sent in.

The hospital kitchen must be, to a certain extent, separated from the ordinary camp one.

The hospital diet of the G.O. of the 24th September and that compiled by Surgeons-General G. Smith and Gordon are admirably suited to hospitals. Any change from those will only make the system too elaborate an one.

A shed for treating contagious and infectious diseases should be invariably erected (the number depending on requirements) well away on the lee of the camp. Ulcer cases should be treated in a separate ward.

The hospital should not be too large, the smaller the better. Long extensive sheds should be avoided. The cottage system is the best. Separate the hospital sheds from the camp proper by a hedge.

Conservancy of hospital.—A good staff of toties is essentially necessary, one to fifteen, twenty at least. Many of these inmates pass their stools involuntarily; these require constant attention; a little dry earth is to be sprinkled over each stool and carried away at once. All foul mats to be cleaned; if they cannot be cleaned they must be burnt.

Two or three vessels well tarred must be kept for night use in each shed in one corner with dry earth handy. These vessels must be removed in the morning.

A small latrine *must* be attached to each hospital shed. These may be built with tarred tatty work. They must be cleaned constantly; a stock of dry earth must be kept in each. If the smell is bad on these, the medical subordinate is apt to rush to the aid of disinfectants like Macdougall's powder, &c. *He should fine the toties instead.* If dry earth is properly used, there will be very little need of disinfectants, for there is no better disinfectant than dry earth.

The sheds should be cleaned out daily and fumigated by burning sulphur or coal-tar. The floors should be cow-dunged at least once in a week.

The patients, where practicable, should be allowed to sit out every morning in the sunshine. It has a tonic effect upon them.

The hospital attached to a relief-work should be a movable one. There need be no fence round it; a rough one would do. Severe cases of illness and chronic diseases should be transferred to a relief-camp hospital. All minor cases, wounds, and injuries, and trifling complaints may be treated in the hospital attached to the relief-works.

In the case here put no difference of system occurs to me as desirable.

Ch. III. Qn. 29.

Question 29.—Disposal of Convalescent Poor-house Inmates.

29. *What system would you pursue for drafting into a relief-work those inmates of a poor-house who recover strength and health there and become fit for labour?*

Punjab and North-Western Provinces.—Persons fit for work after examination by members of the committee should be sent to relief-works, in gangs of 20 to 25, in charge of mates.

Bengal.—Periodical inspection of inmates of poor-houses. Those fit for labour to be sent to a work in charge of a .

Bombay.—The civil and medical officers in charge should inspect the inmates daily and all new comers, and send the able-bodied to works in charge of muccadums.

Madras.—Twelve European gentlemen and 1 Native have replied.

It is generally recommended that the selection should be made by or under the advice of the medical officer, and that the ability of the selected drafts to work should be tested by giving them light labour about the camp before sending them to working gangs.

Punjab.

PUNJAB.

Mr. Nicholl.—Upon the report of a medical officer that certain of the inmates were fit to do ordinary labour, they should be despatched to the nearest relief-work in charge of a chaukidár, and informed that they will not be re-admitted into the poor-house.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—Such persons after being examined by two or more of the members of the poor-house committee were sent in gangs on to the relief works in charge of mates, one mate being appointed to each gang of 20 or 25 persons. As the gangs were able to reach the works the same day they left the poor-house, no advances were made them for diet money. They received the usual wage on arrival at the work.

Bengal.

BENGAL.

Mr. Toynbee.—I would have a periodical inspection by a thoroughly trustworthy officer of the inmates of the poor-house; if possible, I would associate with him a medical officer, the best available. All those who were found fit for labour I would send in charge of peons, or of a police, or some other guard, to the nearest relief works. I would, as far as possible, let them form themselves into gangs, under their own mates or *sirdárs*, and I would provide them with a cloth, food enough for the journey and for a day or two over. In the cold season I would give each a blanket. If certain poor-houses were periodically inspected on fixed dates, the officer in charge of the relief works would know when to expect the poor-house gangs, and would make arrangements to receive and hut them. Two or three days before the date of the periodical inspection, the officer in immediate charge of the poor-house could send the officer in charge of relief works an estimate of the number likely to be drafted out on to the works.

Mr. Kirkwood.—Any person belonging to a poor-house who becomes fit for earthwork, should, if there is earthwork available of a suitable kind, be sent there in charge of a peon. Generally three or four persons or more should thus be sent at a time. These persons should be accompanied by a challan, giving full particulars about them. They should have enough food given them for the journey. On arrival at the work the peon should hand them over with his challan to the overseer. The overseer will then take charge of these new-comers and will grant the peon a receipt for them. He will take that receipt back to the poor-house, and hand it to the superintendent, who should file it. If unable to do earthwork, but able to do spinning or weaving and not homeless, the person should be sent with a week's supply of food, *plus* the food necessary for the journey, to the cotton store nearest to his or her home, with a challan, in the same manner, and should thus be handed over to the cotton store-keeper. Whether sent to the cotton store or to earthwork if the person leaving the poor-house has not a fairly decent cloth for a covering, he should be provided with one before his departure. The cotton store-keeper, after advancing a supply of cotton, should forward the person by his peon, with a challan, to the head-man of the village in which the person's home is situated, who should give a receipt for the person, and should thenceforth keep an eye on him or her until well afloat. Similarly, those unable to do any work, but not homeless, should, when the house-to-house relief arrangements are complete, be sent to their homes from the poor-house with a challan in duplicate and food for a week, *plus* the food necessary for the journey. One challan should be delivered to the village head-man, the other to the officer entrusted with the distribution of house-to-house relief, so that he may speedily supply them with relief. All these despatches from the poor-house should be made under the authority and by the orders of an inspecting officer or of not fewer than two members of the relief committee. The registers (A.), (B.), and (C.) should, in the column of remarks, bear his or their endorsement as to the number of persons (men, women, children, &c. separately,) thus discharged, the manner of their disposal, and the amount of food or cash or clothes given to them on their departure, certifying that all this was done in his or their presence.

BOMBAY.

Mr. Hewlett.—At the midday inspection the medical officer would be able to select cases which should be drafted to a relief work and all new-comers should, as before recommended, be inspected to see whether any were fit to go at once to a relief work.

Mr. Norman.—Able-bodied persons who are pronounced fit for work should be drafted on to the works in small gangs under muccadums and karkuns, arrangements being made to feed them at certain fixed stations *en route*. No difficulty is experienced in carrying out this system.

Mr. Spry.—The civil officer, in conjunction with the medical one in charge of the hospital, should make periodical inspections, say, every two or three days, of all the people in the poor-house, and send to the relief work such as are fit for labour.

MADRAS.

Mr. Crole.—I have found it expedient, before finally sending paupers out of camp to works, to keep them at light tasks of stone-breaking within the enclosure, or immediately in front of the camp, without pay for a week. They should be fed and otherwise treated in precisely the same way as other paupers. There are three reasons for this—

(1*st*) by gradually hardening the muscles it constitutes a good preparation;

(2*nd*) it enables the camp superintendent to correct in time any mistake which may have been made in the estimate formed of any pauper's health and strength;

(3*rd*) the paupers so drafted more willingly leave the camp where they have received food only in exchange for their labor, to go to the relief-works where they are paid in money.

Major Baynes.—The ordinary poor-house should be visited once a week by the inspecting officer in company with the medical officer for this purpose; they will select such persons as are considered capable of doing work, either on Class I. or II. or who should be put on gratuitous relief. Lists of these persons will be prepared in triplicate according to their classification and signed by the inspecting and medical officer; one copy will be filed by the master who will send the two others to the relief officer, who, in the case of persons discharged for labor, will forward a list to the engineer officer in charge of the works, and on receipt of detailed information from that officer as to the works on which he requires coolies, &c., the relief officer will issue detailed orders to the poor-house master as to the disposal of such coolies; every person thus sent to work is to be supplied with a labor ticket and marching batta if required. In the case of persons sent to their villages on money dole, the relief officer will give notice to the village inspectors, and on receipt of a report from them that they are prepared to carry on payments to them at once, the master will be instructed to despatch them, each person is to be provided with a ticket, and with also travelling batta if required. The best time to discharge persons from a poor-house is immediately after the morning meal.

MYSORE.

Mr. Ricketts.—Such poorhouse inmates as are here referred to should be passed out by the doctor and first sent to light work or special gang, and then as they went on improving they would be drafted after inspection into a stronger gang till ultimately they joined the able-bodied or A class.

QUESTION 30.—RELIEF OF PARDA-NASHIN OR GOSHA WOMEN.

There are two classes who ordinarily receive gratuitous relief without being inmates of poor-houses. The first is parda-nashin or gosha women. What test can be applied to prove their necessity? Would you inquire into their cases through an official or a non-official? Supposing they have hitherto been dependent on a person who now refuses to support them, would you admit them to relief or require him to support them if he is able to do so, (1) *if they have close natural ties to him,* (2) *if they have not? Supposing the necessity of relieving them to be established, how would you relieve them, with money or food, or by giving work, such as cotton to spin or grain to grind? How often should this relief be given, and in what quantity? When, and under what circumstances, should this relief cease? Have cases occurred in which dependants of persons in easy circumstances have claimed or obtained relief, and how have such cases been dealt with?*

Punjab and North-Western Provinces.—Relief should be administered through respectable native gentlemen, official and non-official. Money and cotton to spin or grain to grind should be given out. Relatives of those who can support them should be compelled to do so.

Bengal.—Officials, such as patwaris, and Government ryots, may be utilized in the districts as municipal committees in towns; also planters. Cotton to spin may be supplied to purda-nishins.

Bombay.—A committee of native gentlemen should visit all parts of the city, and discover the deserving gosha women, who should be supplied with work, or free grants of grain if unable to work.

Madras.—Gosha women should be sought out by an official, some say by a female pensioner. A committee is not recommended. A money dole is preferred to giving work. Fraud is said to have been common.

PUNJAB.

Muhammad Hayat Khan.—It is quite necessary to support the pardahnashin women and the men quite unable to work, and attention to such persons would create good ideas in the minds of people. The pardahnashin women would seldom come to the relief works, and but few of them would really need assistance; but an inquiry of their necessities had better be made through non-official respectable men, or in

CH. III. QN. 30.

PUNJAB.

the case of there being none, it should be made through tahsíldárs and members of the Relief Committee, who would submit it to the civil officer. The men on whom they were previously dependent for their support could not be held responsible for it in famine times. There are two ways of relief for such women: (1), if they are able to work and know the work, cotton, wool or sewing work should be given them on daily wages, and those who are accustomed to grind should be employed on the same; (2), if they are old and unfit to work, they should receive gratuitous relief. The pargannah tahsíldárs, after full and satisfactory inquiries, should send a list of such women to the superior civil officer, who would send 8 or 15 days' food and work to such women to their homes through a respectable member of the Committee or tahsíldár, and the latter or any other officer should at least twice in a month go to the villages (presumably they would be few in number) where they live, and satisfy himself that the last supply was duly received by them, and the work done by them was duly received back. The lambardárs should have a register of such paupers, in which the patwári, under the attestation of the zaildar and lambardár, should enter the date of receipt of supply, its quantity, number of days for which it was supplied, and the amount of work done by them in the week, and officers would sign it at their inspection. The officer should satisfy himself, through other women, that the food supplied was duly received by such pardahnashins.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—The necessity will arise after famine prices have prevailed for some little time. Respectable native gentlemen, official and non-official, might inquire into their cases. Any person able to do so should be compelled to support all his dependants, whether they have or have not close natural ties to him. Unless magistrates are invested with some such powers they have no means of checking the lists of pardanashin women, which must be prepared by native gentlemen.

Mr. R. Wall.—I have known cotton distributed to purdanasheens to be spún, and as long as high rates were given, such as admitted of getting the work done in the bazaar for less and pocketing the difference, there was a wide spread of "purdanasheen" distress; but when the rates were reduced to the market price, and there was no profitable margin left, the mock distress among the purdanasheen class ceased! I believe their male relations made a good thing out of it while the high rates lasted. I believe something of the kind was done at Amroha, a Muhammadan town of some 30,000 inhabitants in the Moradabad District, North-Western Provinces, in 1869. It was managed through the meer-muhallas, and was, I believe, successful.

Mr. Story.—This is a most difficult matter to test. It can only be done by inviting the most respectable native gentlemen to become members of the relief committee. These gentlemen should be entrusted with the distribution of relief. Both officials and non-officials might work together. If the person they are dependent on has the means, but refuses to support them, and there are close natural ties between them, I would insist upon his supporting them. In my opinion, as far as my experience goes, there are few natives who would not support their female relations to the utmost of their power in times of difficulty. If the women have no one to depend on, or the person they depend on is too poor to do anything for them, then they must get relief. I would leave the matter of how they were to be relieved, and the seeing that work, where the recipients of the charity were capable of working, has been fully executed, all to the management of the native gentlemen. I think the relief should be given weekly, in money for spinning and in grain for grinding. Most of these women in ordinary times earn their livelihood in this manner, so that there need be no difficulty in ascertaining the quantity of labour they should do per diem. The money given should be sufficient for them to obtain daily 8 chittacks of flour and 2 pice for purchase of condiments. Stopping relief of this kind can only be judged by the rates of prices prevailing for the cheapest food staples. Probably when prices rise to 10 seers per rupee some relief of this kind will be necessary. Until that happens I do not think there is any necessity for relief; a case here and there may arise, but it will be exceptional.

Mr. Quinn.—The class of *pardanashins* who require relief is not a large one, and is to be found almost exclusively in towns, more especially in old decayed towns. Their case can best be inquired into by non-official native gentlemen. At least I was satisfied with this mode, and do not think that they abused the large discretion necessarily left to them. A proper nominal register should be kept up, and should contain a brief account of the circumstances under which each person was admitted to relief. Those relieved should receive in advance a weekly dole of money. This is cheaper and less troublesome than giving daily rations. Those who can spin should be given to spin a certain amount of cotton, to be returned at the end of the week, but their allowance should not be fixed with reference to the value of their labour. I do not think that any test can be applied. I should certainly require the head of the family, if he had the means, to support those connected with him by close family ties. This is in accordance with the customs of the country, and would ordinarily be enforced by the *biradari* on pain of repudiation. I should not, however, go beyond this. A native of India is as much bound to support a deceased brother's widow and children as a native of England is to support his own wife and children.

BENGAL.

BENGAL.

Colonel Burn.—The patwari and Jet ryot system, as already proposed, for the utterly helpless in the mofussil, and municipal commissioners in the towns. We found both systems answer in 1874. Natives who are in a position to allow their women to remain *purdah-nusheen* would seldom or never desert them at time of need. If they had to go far for work, they would, among themselves, organize some means of looking after the females and little children. I would give those women I *must* help cotton to spin; it would save their dignity, which is, I submit, desirable; self-respect should always be encouraged, and they would fancy they were doing something, and not be as such classes (except some Brahmins) abhor to become, the bare recipients of charity. We found no greed or covetousness in these classes in 1874, and no eagerness to take undue advantage of our charity.

Mr. Hodgkinson.—The question of village relief is perhaps the most difficult to answer satisfactorily in the whole range of the subject. At Hutwah I was able to work through putwaries and resident tickadars immediately connected with the estate. A district officer has not the same hold on the former; and for

the latter an official element, which from want of local knowledge is not so efficient, has to be substituted. The course I would adopt in this district is as follows:—

When distress bids fair to ripen into a famine, after dividing the districts into circles, each under the supervision either of an official or some influential European or native gentleman, I should call upon the chowkeedars of each village, through the police, to deliver in within a given time at the thana a list of all persons in their villages who are without means of subsistence, but from being *purda nasheens* or bedridden are unable to present themselves for relief. The chowkeedars would be furnished with orders to the village putwari directing him to write and test this list before submission. These lists would be then sent to the circle officer for such inquiry regarding the persons named in them as he is able to make, either personally or with such agency as he has at his command. Residents holding large tracts in lease, like indigo-planters, who are very numerous in this district, have exceptional facilities for ascertaining the truth with a little trouble. To such of the *purda nasheen* women I would supply cotton to be twisted into thread, sufficient to afford a fair amount of employment for 15 days, and either 10 seers of grain or money sufficient to buy it. On the return of the thread a similar task and allowance would be sent. About 700 *purda nasheen* women thus obtained relief in the Hutwah subdivision in 1874. Similarly every 15 days a like allowance was sent to the incapable and bedridden poor. The main difficulty in distributing the allowances to the *purda nasheen* women and bedridden folk is the agency to be employed. I should, in this district, employ the chowkeedars or putwaries as might be most convenient under a somewhat strong supervising staff, and pay them extra for their labour. In hard times the chowkeedars sadly require help. No case came to my notice of relief being claimed by dependants of persons in easy circumstance, although I knew inquiry was made personally by the relief officer in a number of cases.

Mr. Toynbee.—As regards relief to *purda-nashin* women, the only test that can be applied to their case is local inquiry into the circumstances of the family in which they reside. If official agency were available, I would prefer it to non-official, as being less likely to lead to abuses; but in the absence of the former, I would accept the best non-official agency I could get. The less *local* this was, the less would be the fear of abuses. The village relief which was carried out in Pooree in 1867 met these cases in this way: Selected Deputy Collectors and relief inspectors visited (or were supposed to visit) every house in every village, and gave tickets entitling the holder to receive a certain quantity of rice weekly on a certain date from the nearest grain depôt. The quantity allowed was in accordance with the apparent necessities of the family and the number in it. No test could be applied: each case was left to the judgment and discretion of the officer concerned; and as far as my memory serves me, I cannot remember any flagrant cases of want of judgment. But it is in my opinion a dangerous method of relief, and only applicable in extreme cases. If introduced, it should be introduced rather as a measure of alleviation than of prevention, its object being to help not those who were helpless from the first, but those who had hitherto helped themselves and tided over the famine as long as their resources could stand the strain. It is only when these private means have been exhausted that the State should give aid.

A requisition on the head of a family to support such persons would have little effect, unless the refusal of it entailed a distinct penalty. To impose this, legislation would be necessary. All that the relief officer could say would be—"Your circumstances appear to "me, after local inquiry, to be such that you cannot "fairly ask for any extraneous aid, and none will be "given you."

If relief be considered necessary, the best form of it would of course be to give cotton to spin, but this is a form of relief hardly applicable to *purda-nashin* women of the better classes; next to that to give a weekly dole of grain payable on a ticket to be given by the relief officer. This would presume the existence of Government grain depôts. In their absence money would be given, and perhaps one payment would suffice, calculated on the amount required to tide over the remaining period of scarcity. Relief to *purda-nashin* women should, generally speaking, cease as soon as the country has begun to recover itself and a good harvest has been reaped. It would be advisable for the relief officer, who issued the relief tickets in the first instance, to make a final visitation and inquiry. He would recall all the tickets originally issued, and would, in cases when relief was still necessary, give a ticket for a final and definite measure of relief, such as was suited, in his judgment, to the circumstances of each individual case—to one family a maund of rice (if Government stocks were plentiful and the demand to purchase them slight); to another a sum of money. As far as I remember, several cases occurred in Pooree where persons in comparatively easy circumstances obtained relief by ticket. On the visit of a relieving officer to a village, many devices were resorted to to deceive him as to the actual circumstances of families, and he was in many cases regularly mobbed by applicants. It was a most difficult task, and all that could be said was that, in cases where tickets were wrongly given, an error of judgment was committed. The only punishment was cancelment of the ticket.

Mr. Kirkwood.—Both (1) the purdanashin or gosha women and (2) the sick, infirm, cripples, and bedridden folk who cannot leave their homes should be sought out by the same agency and be relieved in the same manner. Many others not falling within these classes, but who ought to be relieved at their homes, should be sought out and relieved in a similar manner. Therefore I will answer Questions 30 and 31 together.

Where village agency does not exist, it should be created; and where it does exist, it should be utilized, improved, and supplemented. In either case the organization of the establishment for this relief should be one of the earliest measures taken when it is known that severe distress is impending. I would say,—sustain in their villages all those destitute and needy persons who can be so sustained, and collect into poor houses or hospitals only those homeless or ailing persons who cannot be so sustained. Let them be sustained by earthwork if they can perform it and there is some suitable work in the neighbourhood; let them be sustained by the cotton relief where earthwork labour is not suitable; let those who cannot wholly thus support themselves and their infant children be aided by a small monthly gift of cash or grain; let those who cannot thus in any way contribute to their own support receive a monthly gift of cash or grain sufficient for their maintenance. The case of those supporting themselves by earthwork or spinning or weaving has already been considered when dealing with those reliefs. I will not here repeat what I have there stated. As to the house-to-house relief, even when wholly gratuitous, it is very much more economical than poor-house relief, not indeed averaging one-third of the cost per person relieved. It is infinitely more acceptable to the relieved, and meets the case of very many, not only purdanashins, who would rather die or, at all events, sink into the lowest state of emaciation than frequent the poor-houses.

In 1867 this system of house-to-house relief was essayed in Orissa, though late, yet with great good. In Behar it was commenced upon earlier and did much good; but we were even there (at least so far as Bhagalpore was concerned) only at the end of April finishing the preparation of registers which should have been well-nigh complete three months earlier. In the

Ch III. Qn.30.

Bengal.

recent Southern India famine of 1877 the delay appears to have been much greater, while, owing to prices having been allowed to rise much higher than was the case in Behar, the famine was much more severe. The consequences of the delay thus became far more lamentable. Look, for instance, at the state of things in Mysore, as described by the Government of India on the 30th October 1877.

When anything like a three-quarter failure of the crop over a considerable area is assured, preparations for this relief should commence even before the harvest is reaped. By this means all should be in readiness by the time when the temporary lull occasioned by the scanty harvest is over. The first step towards preparation should be the appointment of fit persons to inspect every village, and draw up lists of the needy, stating for each person whether they should go on to earthwork or on to spinning or weaving relief, or should be relieved gratuitously, and, if gratuitously, the amount of monthly dole which should be given, and from what date it should begin. In Bhagalpore this preliminary operation was not commenced until the middle of March, long before which date it should have been completed. The monthly distributions should have already commenced. The consequence was that there was no time for a selection of the most fit persons available for inspectors for this purpose, distress had got ahead of us, and incomplete registers and an absence of method and regularity signalized the first distribution of April. November should have seen the village inspectors at work, and January should have found the superior relief officials going round checking and revising the registers thus compiled. Before discussing the establishment necessary for making this inspection I would pause for a moment to remark that in Bhagalpore district, I, with then 10 years' service, was placed in charge of the relief operations in the part of the district lying north of the Ganges, with a population of 960,000 persons. I was in semi-independent charge of the relief operations, working under the Collector's orders as regards general policy and reporting regularly to him, but being left to myself as regards detailed arrangements. Under me were eight officers who were either Assistant or Deputy Collectors or of similar position. Each of these officers had a separate charge, each charge being approximately one-eighth of the whole area. All relief operations in that area were under their control. They submitted regular reports and returns to me, and were guided in all matters by my instructions. One was an Assistant Collector, four were native Deputy Collectors, one was a police officer, two were European gentlemen not in Government employ, but engaged for the occasion on a pay of Rs. 200 per mensem. I think it would always be well to have some of these officers natives and some Europeans, and all (if possible) in Government employ. The natives and Europeans would stimulate and improve each other's action, the European learning from the native to be sympathetic and patient with prejudice, the native having in the European an example to keep him up to the mark in method and energy. I was constantly on the move over the whole area, and also had a head-quarters establishment at a central locality for the purpose of checking the returns, compiling statements, passing establishment bills, doing correspondence work, &c.

For the purpose of this house-to-house inspection and relief each of the eight circle officers had under him a certain number of "group superintendents" and an "assistant superintendent." The group superintendent was generally, I think, on a pay of about Rs. 10 per mensem. He was in charge of a group of about eight or 10 villages, and was responsible that no one in those villages died. He was generally a village putwari or accountant; a man who had lived in one of the villages in the group all his life, and, as a servant of the Zemindar, had considerable local knowledge and position. The group superintendents were required to draw up registers showing the names and circumstances of each person in the group either now requiring or likely shortly to require relief, and the manner and amount of relief which would be appropriate. The assistant superintendent (a trustworthy native official on Rs. 80 to Rs. 100, according to the importance of his charge) would go all through the circle to which he might be attached, check and revise those registers in the village, actually visiting the people's houses and seeing for himself their condition. He should enter against each person's name the manner in which relief should be afforded and (when to be relieved gratuitously on the house-to-house system) the amount of relief to be given. Whenever the allowance recommended to be given may be especially large or small, he should note the reason therefor against the person's name. When the assistant superintendent may have finished his check of several groups, the officer in charge of the circle should start on a round of the villages whose registers may have been thus completed. The registers should remain in the custody of the group superintendent. The circle officer would then revise the registers after personal inspection. The register for each village should run thus:—(1) consecutive number; (2) name; (3) caste; (4) age; (5) father's name (or when a married woman husband's name; if husband dead, then "widow" should be entered); (6) what property possessed of; (7) number in family, and in the case of a widow, with whom she lives; (8) description of relief recommended; (9) if house-to-house gratuitous relief is recommended, amount of dole to be given; (10) group superintendent's remarks; (11) assistant superintendent's remarks; (12) circle officer's remarks.

Bombay.

BOMBAY.

Mr. Spry.—At Bijapur, where there are large numbers of gosha women, the plan that I adopted and which I would adopt again, was to have a sub-committee composed of a European officer as president, and a certain number of respectable native gentlemen selected from each sect. The duty of these native members was to visit all the places in the city and to find out all deserving cases of indigent gosha women, also whether or no they were able to do any description of work. All these cases were reported to the committee when sitting, and then grants used to be made. Free grants of grain, &c. to those who could do no work; but to those who could, a certain amount of grain to grind or of cotton to spin was daily sent, in consideration for which they received food grants also. The only test of necessity or check that could be applied was that the visiting members were of different and often of opposing sects, so that when the grants were publicly made, if any attempt at imposition had been made, it would probably be brought to light.

If a man, able to support his wife and children, failed to do so, and persisted in so doing, the law can be brought into force against him. But with other dependents, if the man will not support them, he cannot be made to.

The quantity of grain given was exactly the same as that given in a cooked state to the inmates of the poor-house, only it was uncooked and it should be given daily. This description of relief would cease simultaneously with other descriptions.

I have come across cases in which the dependents of persons in easy circumstances have sought relief; but a public representation to that effect to the person has invariably answered.

All sick and decrepits that I possibly could, I would bring to a relief-house. If they could not walk, I

would bring them on carts or on bullocks. But even then a certain few cannot be moved. The village officers find these out by house-to-house visitation and make a register of them, which register is frequently tested by the circle inspector and other famine officers. They are then relieved through the agency of the village officers. If arrangements can be made for giving them cooked food, all the better; otherwise uncooked food must be given. This species of relief will stop simultaneously with that in relief-houses.

MADRAS.

Mr. Longley.—The most suitable test is strict and searching inquiry, by house-to-house visitation, either through a combined official and non-official agency supervised by an European officer. When the number of gosha females is large a female East Indian Government pensioner well acquainted with the habits and customs and language of these females is about the best person to entrust this work to; a salary should be allowed her and the list of females submitted by her should be subjected to a strict and searching test by the best means available, *e.g.*, the priest or other influential member of the Mahomedan community, tahsildar, municipal commissioner, or other local influential individuals.

Gosha females who have close natural ties to a person on whom they are dependent, and who has means, should not receive State aid. He is bound by the law of his religion to support them. Females who have no such relatives, or having such, but without means, should receive State aid.

They should be relieved by a money-dole. Giving food or work (besides necessitating labor and expense) is unsatisfactory.

The dole should be paid weekly, and should not be less than the value of 1 lb. of grain daily.

The relief should cease when prices have fallen, labor is procurable, and distress disappearing.

Cases of this kind have occurred, and, when discovered, aid has ceased.

Mr. Price.—I consider the relief of gosha females to be a very difficult matter. Inquiries regarding them through men are not satisfactory. They can obtain information regarding the women's belongings, but can rarely see the subjects themselves. I prefer the agency of a respectable Eurasian woman, who can make inquiries and see claimants. I would have the first-mentioned inquiries made through officials upon whom one has some hold. I have already given my experiences in regard to the aid obtained from a non-official. I would not admit gosha women to relief where their natural protectors were able to support them, but refused to do so. I think where a man turns adrift, in times of famine, a person who has no claims of near kindred upon him for maintenance, but whom he could, if he wished, support, *e.g.*, (as was frequently the case) his mistress, he cannot fairly be called upon to maintain her. The woman would, in all probability, have been just as incapable of supporting herself if she had never been the man's paramour. I would admit the latter class, but not the former. I prefer relieving in money. There are very great difficulties in distributing food. Work, such as spinning, &c., might be given; but I think that the trouble and the staff necessary for distribution, collection, and supervision would be so great as to render relief in this form almost, if not quite, as expensive as giving money. Once or twice a week is a sufficient interval at which to make payments. We allowed the same sum per diem as that fixed by Government for village relief, *i.e.*, the price of 1 lb. of grain, and half to children under twelve. I think that it would be proper to make this allowance the value of the ordinary ration of a relief-camp. I should put a stop, and did, to gosha relief when village relief ceased. It is difficult to determine the exact period at which this latter should terminate. One has to judge by a number of concomitant circumstances which cannot easily be put down on paper. I know of no instance in which gosha women who were dependents of persons in easy circumstances obtained relief. Claims were made, but they were, on inquiry and inspection by our agent and on her report, rejected.

Mr. Austin.—The system of committees for distributing Government relief to gosha women was fully tried in the town of Vellore (having a Mussulman population of about 10,000), and proved an utter failure. The committee was composed of the leading Mussulman gentlemen of the place, many of them descendants of, and nearly connected with, the families of Hyder Ali and Tippu Sahib. It might have been reasonably expected that such persons would have shown at least some common honesty, but the result proved the contrary, and at last frauds became the rule and not the exception, when, with the consent of the collector, I abolished the committee, and did away with their swindle of gosha relief.

I think the only possible way of giving relief to this class without being defrauded at every turn would be to insist on residence in camps specially selected for gosha females, and entirely under female management. They would not of course come into such camps until the only option left them was the camp or starvation. Then I believe they would make a virtue of necessity and come in readily enough. Once the ice was broken there would be no further difficulty. It would be practically impossible to attempt to make Mussulmans support their relations. In the case of a wife or child neglected by husband or parent the law may step in. In other cases I do not see how we could interfere. The question would arise what relatives is a man bound to support, down to what degree of relationship, and how many of them. Lastly, how are we to ascertain the relationship? The very fact of their being gosha prevents our getting at this. On one point I am clear, viz., that whatever inquiries are to be made should be made by Government officials, who can be held responsible for giving correct information. When in camp some light work might be found for them.

When inquiring into the action of the gosha committee of Vellore, the conclusion I arrived at was that *by far the greater portion* of the money granted by Government for gosha relief went into the hands of the dependents of well-to-do Mussulmans, most of them not even being gosha. I am informed that much the same sort of thing went on in the town of Old Arcot, where there was also a gosha relief committee. This committee too was done away with.

Mr. Oldham.—Purdanashin or gosha women.—I know of no fixed test for ascertaining the necessity of these people. Last year inquiries used to be made through a trustworthy Mahomedan subordinate (there are no Hindu gosha women in Adoni), who often admitted that he had been deceived. He was never badly deceived; that is, the persons were always necessitous and pinched to some degree. If the person who used to support women in this position was still able to do so, I used to require him to continue to do so. There were not many instances of this. Very slight pressure sufficed. Before the Madras Government ordered the money-dole I used to give these people a monthly dole of dry grain (the maximum was 15 seers), and require them to spin for it. Afterwards I required them to spin for the money-dole. Many refused to spin and I used the requisition as a test and adhered to it, though told that it operated with great hardship. I frequently investigated cases

CH. III. QN. 30.

MADRAS.

of death reported to have occurred in this class from want of food, and I never found one established.

But in Orissa, in 1867, I have seen the skeletons of such women lying in their houses, some with their ornaments still on their bones. Relief to them would cease with the general contraction of operations and for the same reasons. I never found any difficulty in closing it. On the contrary this class has invariably been most grateful, and recognised the reasons for its cessation themselves. I have frequently spoken to the members of it through the curtain. There are a good many at Adoni.

A few, two or three, cases occurred in which dependents of persons who, if not in easy circumstances, yet were able to support them, obtained relief. It was done through those persons. The recipients were of course struck off the relief lists on discovery. In one case the person who obtained relief for them was convicted and fined for cheating ; in the others held up to opprobrium. The class is a sensitive one.

Rev. Bishop Caldwell.—I do not think it desirable that Government should undertake the relief of so-called gosha women. As a rule I do not believe in the existence of gosha women in this part of India. Where they exist and suffer real distress their relief may safely be left to the help of friends. If they are really people of that class, they belong to influential families and can make their voices heard, and when they do so private help will not fail to reach them. This is a department of charity in which Government will find itself utterly unable to provide against abuse.

MYSORE.

MYSORE.

Mr. Ricketts.—One test would be to insist upon seeing the gosha woman ; but from my experience I should say this was neither considerate nor proper. The best test is her willingness to work. If the official were a Mahomedan, I would inquire through him, otherwise through the cazee or other respectable Mahomedan. In the cases of refusal here put I do not see how the person could be compelled to support them. I know of a recent instance where a Mahomedan woman and her three children were refused to be put on the grain dole, because the husband was supposed to be able to support them, and the consequence was nearly being the death of the woman and her children through starvation. In the majority of cases I would relieve them by giving them cotton to spin or grain to grind. Relief should at first be given daily, and the period gradually extended to once in two days, once in three days, and so on, but not to exceed a week. The quantity should be the same as that given to an ordinary inmate of a poorhouse. The relief would cease with the necessity for relief, *i.e.*, when the famine was declining or fairly over. I have heard of cases in which dependents of persons in easy circumstances have obtained relief. In such cases the influence of the district officer should be brought to bear to prevent a repetition of such abuse.

CH. III. QN. 31.

QUESTION 31.—VILLAGE RELIEF OF SICK OR INFIRM.

Another class consists of the sick, infirm, cripples, and bedridden folk, in towns or villages, who cannot leave their homes. How would you organise a system for relieving them? How inquire into and ascertain their cases? How convey relief to them when they are put on the registers, and what relief should it be? When should relief of this kind be closed?

Punjab.—The bedridden in villages to be relieved by same means as purdah-nishins.

North-Western Provinces—If relief is given it should be on a village circuit system. Zemindars should relieve those in need in their villages and punchagets those in towns. But many officers hold that there should be little or no relief in villages, and that the needy should be brought to poor-houses.

Bengal and Bombay.—Such persons should be relieved by house-to-house visitation under the village circle system of village officers and inspectors.

Madras.—A system of inspection by superior or subordinate officials is recommended, the latter to visit each village at least once a week. The relief to be by money dole on responsibility of the village officials. Strong opinions are expressed as to the dishonesty of these officials.

PUNJAB.

PUNJAB.

Mr. Nicholl.—For the bedridden and others who cannot leave their homes I would adopt the same system as for pardánashins, and in addition to the agency above suggested, Hakims would be available either to furnish information or to convey relief, which should be in the form of food, and in quality according to the condition of the recipient.

This relief should be stopped on the cessation of operations, or, in the case of the sick, on their recovery.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Mr. Tracy.—The sick, infirm, cripples, and bedridden folk who could not be carried to poor-houses would be very few. I would not relieve them at their homes, if they could possibly be conveyed to a poor-house. If they could be conveyed, and were willing, I would have them carried at Government expense. Those who could not be so conveyed I would relieve as follows:—A list of such persons should be prepared by the police and tested by a European officer and native doctor. Then, in each village where such persons really existed, a man might be chosen to receive the money on their behalf. He should have to visit the tahsil once a week and draw the allowance. These cases should be tested by a European officer occasionally. Relief of this kind could not be closed until the paupers' relatives were in a position to support them. This would usually be when the price of food falls to about 16 seers per rupee.

Mr. Lawrence.—I think there should be a division of the country similar to the parish system at home, each division being responsible for the support of the poor belonging to it. The unit for the rural portion should be the *patwári's circle*. The patwári should be made the registrar of births and deaths, and should have an accurate census of his circle. The land-owners should be made responsible by law for the support of the poor belonging to their circle. They should also be responsible for supporting the labourers of their circle. In case of dispute the Government officer hereafter mentioned would decide as to what works should be undertaken and in what order. The theory of the land revenue assessment, that as in a good year Government does not ask more than the fixed revenue, so in a bad year the Zemindar should not pay less, is not adapted to this country. Money burns a hole in the pockets of most natives.

The parish system could be worked by pancháyats in small towns and by municipalities in larger towns. Of course, in times of dearth supervision should be exercised by specially appointed Government officials to see that relief is actually given, and it would rest with these officials to decide when this relief should be closed.

Mr. Quinn.—For this purpose I should break the district up into circles, over each of which I should put a committee of resident native gentlemen. I should oblige chaukidars to report to the committee all cases of distress. The tahsíldar, or some official of not less rank, should periodically inspect these circles. The form of relief would be an order on the village baniya for a certain daily ration. The baniya should submit his accounts weekly, and these should be attested by the patwári. Relief of this sort should cease as soon as grain ceased to sell at famine prices. Any who still required relief should then be transferred to the tahsíli poor-house.

Mr. Lumsden.—I would not attempt relieving such cases, except as a *temporary* measure, at every village in which they were met with; such cases should be removed to poor-houses or hospitals established at convenient centres. I have already stated that I do not consider it possible for Government to undertake the relief of persons suffering from privation at their homes scattered all over the country. Arrangements should be made, however, for all cases of the nature referred to in this question being brought to notice for temporary relief being given, and for their being forwarded as soon as possible to the nearest poor-house or relief camp. Unless the pressure of distress was very severe, I think the rural and station police, village patwáris, kanúngos, and peshkars would be able to see that all cases of this nature were brought to light. Kanúngos and peshkars would of course have to be relieved of all their ordinary duties. This is an essential point in my opinion. When our regular establishments are specially engaged on famine duty the performance of all ordinary duties should be dispensed with.

In *extraordinary* cases it might be necessary to call in the services of a special establishment to secure all cases of the nature contemplated by this question being promptly brought to notice. In that case I would suspend the operation of certain departments, such as education, vaccination, traffic registration, and utilize the employés of these departments on this duty. The services of retired or pensioned servants of Governments might also be called in, and local Governments or Administrations whose territories were exempt from famine should in such cases be called on to assist in supplying establishments.

BENGAL.

Mr. Toynbee.—I would apply the same agency and the same principles to the relief of the class mentioned in Question 31 as those indicated in the answer to Question 30. Given a trustworthy agency, the only method to be pursued is for the receiving officer to make a house-to-house visitation, and to deal with each individual case according to his own judgment. The organisation of a village in Bengal is so complicated, and the circumstances of different districts vary so much, that it would be impossible to draw up rules which would meet every case, or every class of cases; and there is this objection to these forms of relief that they require an amount of trustworthy agency which is seldom or never available and tend to demoralise the people if given too liberally.

Mr. Finucane.—These classes were relieved by gratuitous weekly doles of Government grain. Their cases were inquired into by the local sub-committees described in the answer to Question No. 9, Chapter II. The lists made out by the sub-committees were afterwards tested by paid relief inspectors who went round and visited every village. Such of these persons as were able to do so, came to the relief centres for their weekly doles. Grain was sent by the sub-committees to such as were not able to come for it. Relief of this kind cannot be safely closed till the harvesting of the winter rice crop succeeding that of serious failure.

Mr. Kisch.—I would give village relief only to the bedridden and to those who are infirm through old age. I would not give village relief to the blind, to lepers, or to cripples. Professional beggars generally get some relief from the public even when famine is at its worst. I would insist on their going to a closed poor-house if they wish for Government aid. I would also insist on the sick going to a poor-house till they recover. The cases of the bedridden and infirm should be inquired into at their houses. They should receive a daily allowance—in villages through the village authorities, and in large towns through paid officials. The relief should be—

To an adult, sufficient to purchase 1½ lb. of grain.
To a child (above 12 years) sufficient to purchase ¾ lb. of grain.

When village relief to *gosha* women and to the infirm and bedridden is closed, a gratuity sufficient to enable the recipient to hold out for a month should be granted. I cannot lay down any very definite rule as to when village relief should be closed. There is, however, no difficulty in deciding the point in practice. The moment the end of a famine approaches, labourers leave the works in large numbers, the inmates of poor-houses pray to be allowed to go home, and there is an entire change in the appearance of the people. Confining village relief as I would confine it to *gosha* women, the aged, infirm, and bedridden, there is no need to close it hastily. It should be continued till prices have fallen to at least what they were when relief operations were first considered necessary. For any system of out-door relief, whether the relief is actually given by officials in towns or by the village authorities in villages, the most frequent and thorough supervision is necessary, to prevent both Government and the people from being defrauded. I am satisfied that village relief cannot be substituted generally for relief in closed poor-houses without the greatest abuses prevailing; a sufficiently large and trustworthy inspecting and supervising agency is not procurable in India.

BOMBAY.

Mr. Hewlett.—The class mentioned in this paragraph can only, in my opinion, be found out and relieved by a regular house-to-house visitation, which should be undertaken by members of the committee,—Mahomedans to visit Mahomedan families, Hindus to visit Hindu families. I think cooked food is the best form of relief for them, and their willingness to take it is the best test for their requiring relief.

Colonel Anderson.—Relief in villages is open to much fraud. If a famine was prolonged I would bring all persons who could be moved to a relief-house, and thus reduce the numbers on village relief to the utmost, relieving none in their homes, except as a most temporary measure, who could possibly be brought to a relief-house. The circle inspectors should as far as possible see that all persons requiring relief are sent to the central relief-house, giving such temporary relief as may be necessary; but this branch of their duties will require to be most carefully controlled to prevent fraud and waste.

Mr. Bosanquet.—Persons of this description here were fed in villages by the village officers. The patel was responsible for bringing all such persons to notice, and the inspectors were also expected to visit from house to house in order to find them out. My assistants also sometimes visited each house for the same purpose. A register of these persons was kept at each village. In this part of the relief arrangements no difficulty was experienced. When circumstances are improving, if any such people remain, it is probable they will readily get assistance from their relatives or fellow villagers the same as in ordinary times.

Mr. Spry.—We had a system of village dole, but we stopped it towards the end of the famine, because we found that those who deserved relief got cheated by the patels, while others got relief who ought not. It would be impossible to supervise village relief without a whole army of officers in a large district, There are some very good men, patels and kulkarnis. but the majority are not so. We did trust the patels a good deal. Each patel had 5 rupees entrusted to him, with which to relieve all stragglers and villagers in bad condition, and to send them to the relief-houses. If this had not been done, the patels, if only told they would be reimbursed afterwards for any expenditure, would have done nothing; it was better to risk the money than human life. That money was in some cases spent well, and in some not.

Mr. Symonds.—I had only recently come to the country when the famine began. At first I was employed in visiting villages and inspecting the relief lists under the First Assistant Collector. We had about 100 to 105 villages under us. Later on, we were ordered to force those who were capable of walking to go to relief camps. They were most unwilling, as they only got in the camps as much as they got in their villages, and the same amount of food would go much further at home than away from it. The village inspector prepared the list first, and we came round to inspect the people on the list, and in some cases we also inspected all the people not on the list, to see if there were any who ought to be on it. We found the work done on the whole very fairly. The inspector more often put on people who ought not to be on than the reverse. Patels were not employed in drawing up these lists, but were told to put on every one who was in danger of starvation as an emergent case; the patels used to give much assistance, but they would always go too far and put on people unnecessarily. I have never inspected or tested any of the mortuary registers, though it is the duty of an assistant collector to inspect all village records and this among them; but I have never given any special attention to these registers.

Mr. Moore.—A European taluka officer with 80 or 100 villages could not exercise much check over them, though he would some; if we had such an officer over every few villages, it would be a perfect system. He should have about 40 villages and inspect five a day. The circles for the village inspectors should be about seven villages. There is great reluctance to leave the villages. Some people said they would die rather than go away, but very few. We carried them away in carts to relief houses, when there was danger of their dying. If I had a system of supervision such as described, the distance test might be kept as a final resource in order to test the necessities of persons whom the inspecting officer suspected not to be in need; but there would always be some persons respecting whom no inquiry would enable the officer to become quite sure whether they were in extreme want or not. I should anticipate no difficulty in getting a sufficient number of circle officers for inspection, if all departments co-operated—schoolmasters, civil court bailiffs, police officers, &c.

I would send all who could do any work, able-bodied and weak labourers, to the large works under the Public Works Department. All quite unable to work I would congregate at relief houses at one or two principal stations in the taluka, so as to have them under good supervision. If the numbers are great, residence should be compulsory. I heard of all sorts of cases of fraud when they were fed at home; patels and kulkarnis put down grain as bought when it was not, and I don't think any supervision could secure their getting their food. The system of village dole was tried under such supervision as we had, and worked badly; but even with the complete supervision sketched above, I don't think it would work. The pauper would get the dole the day the European officer came round to see it, but not otherwise. I think the system of relief-house centres is decidedly the best.

Mr. Keyser.—I do not think that people cannot be fed in their villages, and I believe it would be possible for all those incapable of working to be relieved on village dole; but you must have a test, and if people are fed at home, there is no way of discriminating between those who must be fed and those whom it is not absolutely necessary to feed. People will stay away from work and resort to any tricks in order to get fed at home. I found no very extreme dislike to go to relief camps, and there was comparatively little mortality of them. We had on 23rd June 1877, 3,200 out of a population of 85,000 or 90,000 in Bhimthari on direct relief; but I cannot say how many were in relief-houses and how many on village dole. In March there had been 900. In first week of September there were 5,000, out of whom 1,300 a day were casual travellers. In Indapur the numbers were very much higher; the first week in September the total came to 14,400 a day and 3,000 in a part of Bhimthari. There was no check on the numbers of travellers fed, because patels were authorised to feed anyone who was starving, and they might have sent in any numbers they liked, limited only by the fear of exciting suspicion. I do not, however, think there was any very excessive peculation. The numbers fed in the relief-houses were checked by my constant inspections; I was always riding round and mustering the people.

Mr. Wingate.—I think considerable mortality can only be prevented (apart from migration, where there will always be mortality) by starting relief measures early and by getting every officer to his post before

the strain commences. I believe the most efficient and economical system of relief to be to put an officer in charge of a given set of villages and to provide a work for so many such sets of villages; and to let the circle officer have his hospital, his central camp, his village dole, and perhaps occasionally his little work; and the works officer his hospital and his camp. Every large work should be a complete centre for relief, embracing hospital, feeding, nursing, and working arrangements; if the professional officer can manage all this, as he often can, I would encourage his doing so; if he objected or could not, I would give a civil officer to help him. With native circle inspectors under European relief officers, and a sufficiency of officers, I think a compulsory law unnecessary at present; but I think a measure to enforce village responsibility in respect of caring for the few incapable of workiin and of sending those who can work and are starvinng to the Government centres, would be useful, only it would require care in framing and in woking. But village relief I would confine within the narrowest possible limits for the same reason that I object to numerous small works, viz., the impossibility of adequately supervising the relief given or the expenditure incurred.

Mr. Ashburner.—I believe the village organisation in this Presidency is very superior to what it is in Madras or elsewhere; and if the patels are ordered to relieve every sufferer and given money for the purpose, they will do it. You can trust them to give a meal to the distressed and hand them on, but not to feed permanently, on a village dole system, a large number of residents in the village, nor yet to organise any considerable system of relief, involving large numbers, where it would be necessary to give them a discretionary power. For this reason I would not leave the house-ridden people to be fed at home, but would have them brought to a central camp. If there was a very limited number of such people and a good system of inspection by circle officers and relief officers, I would trust the patel to feed those on the list. provided the number did not exceed his capacity for supervision, but I cannot fix a number, as it would vary so much.

MADRAS.

Mr. Longley.—A system somewhat as follows must be organized for such relief:—One or two or more superior officers (Europeans) to be appointed for each taluk according to its size; whose duty should be to supervise all relief. There should be under them a staff of relief inspectors, so arranged that each inspector should be able to inspect each village in his range *at least once a week*, and under them should be placed the local town or village authority in immediate charge of the relief in each town or village.

No form of relief for a district is, in my opinion, complete without the money dole in villages for the description of persons mentioned in the question, also "goshas" who have no one to support them and "caste persons."

The inspectors should inquire into and ascertain the cases of all in need of such relief by moving about from village to village and entering all to be relieved in a register to be kept in each town or village. This register to be checked by the European relief officer at his fortnightly visit.

Relief to such persons should be in the form of a money dole to be distributed weekly or bi-weekly, according to circumstances, money for the purpose being procured on indent from the nearest local treasury.

Relief of this kind should close when prices have fallen considerably, distress is rapidly declining, and the general state of the country improved.

Mr. J. G. Horsfall.—The village officers must be responsible that all the deserving persons are placed before the village inspectors and issue the dole, keeping daily accounts which are checked by the inspectors and superior officers. This system is reported to have worked well and cheaply. For towns with 5,000 inhabitants or more local committees should be fixed to supply the information otherwise furnished by the village officials, and for the better distribution of money dole. The village dole may be closed gradually as the circumstances of the recipients and of the season improve.

Mr. Price.—I believe the only way to meet cases of the kind mentioned to be to form each taluk first into small circles of, say, five or six villages at the outside, and to hold a house-to-house inspection by special agency. If reports from village officials are acted upon, the grossest frauds will occur, and in famine times every one who thinks that he has a chance of getting anything out of Government is prepared with a doleful story. I should begin, as I have said, with small circles and open a register for each village, to be filled in by the inferior inspecting officers, showing the village, name, sex, caste, and age of the person entered, the cause which renders it necessary to put him or her on relief, the date of entry, a column for how disposed, of *i.e.*, when discharged, or died, and remarks. These registers should be given to the village officers who should receive funds from which to make payments. Each set of small circles should be grouped into larger ones under a subordinate inspecting officer who should go round, personally inspect the persons entered, and add or strike off as may appear necessary, examine and check the accounts, make inquiries as to payments to paupers, and superintend some of these. The larger circles should be formed into divisions of half or whole taluks, as may appear requisite, and placed under an European inspecting officer whose duties over the whole of his circle should be the same as those of his subordinate inspectors. This would provide sufficiently, I think, for the discovery of those in want of assistance and unable to help themselves. I would, through the lowest class of inspectors, pay to the persons on village relief a money dole, and subject this to the constant supervision of the circle and divisional inspecting officers. There are so many incompetent and knavish village officers that I would, had I to deal with another famine, not pay, as we did, through them, but make them only assist the minor circle inspectors. These latter might very well be chosen from the best of the village officers. I would make the inspectors keep an account of payments to each individual, and these might be made two or three times a week. I hardly think daily payments necessary. The amount of the dole given should, I think, correspond to the value of the poor-house ration. This, of course, supposes that only those unable to support themselves, and having no one capable of maintaining them, are admitted to relief. The question of how to deal with the sick is a difficult one, for giving them all medical aid would involve very heavy outlay; and I have more than once found that when I sent a medical officer to any place where sickness was very rife, the people refused to have anything to say to him or his medicines. The

only thing that I can see to be done would be to give the sick relief in money and leave nature to herself. I would allow paupers unable to come to the place of distribution to receive their dole from the inspector in person, or, subject to frequent inspection and inquiry, to send some one for it. I would close village relief entirely when the condition of the country and people approached its normal state, compelling such of those then receiving relief, and who had no means of support, to go into a poor-house, which should not be closed until the famine was completely over.

Mr. Austin.—This question brings me to the subject of village relief. I have been supervising this form of relief more or less since its introduction. My opinion is that it has been a very great failure. The chief result of the system has been to hopelessly demoralize our village officials in the first place, and the people generally in the second. The number of village officers who have been dismissed and suspended for offences connected with village relief is enormous. In some instances the whole of the village officers' relatives were put *en masse* on relief, in other cases only a few of their near relatives; complaints by the paupers of non-payment of relief were numberless. The usual trick was to pay for several days at once and then deduct a large per centage of the pay as a perquisite. In other cases they were always paid correctly enough, but were obliged to purchase their food from a bazaar kept by some relatives of the Monigar, who thus plundered them by selling grain at prices far beyond their ordinary rate. If they grumbled they were simply struck off relief, and when an officer inspected the village he was told that their names had been removed as some relatives had come forward to support them, or something of the kind. Meanwhile the unfortunate paupers had probably died from starvation or wandered away from the villages in hopes of getting a subsistence by begging. It was found to be almost useless to attempt to hold magisterial inquiries into such cases. Long before the case could be heard the paupers had been settled by the village officers, and when they appeared in the witness-box affected to be unable to remember what they had received or when they received it.

Had I to go through another famine I should strongly advocate the giving of no village relief whatever, and in its stead would organize relief camps on improved principles and in far greater number. A close house-to-house inspection would be necessary in every village to see that the sick and helpless were not left to die of starvation, but this would be an easy matter compared with the supervision of village relief. The Monigars would be held criminally responsible for any death that occurred through their negligence, and as he would have nothing to gain by keeping such paupers in his village he might be safely trusted in most cases to send them to the nearest camp.

By this change of system I believe both Government and the unfortunate pauper would greatly benefit. It is notorious that the money dole is utterly insufficient, and partly from this cause, viz., that the rate is fixed with reference to the price of grain in the cusba town, while the value of grain varies greatly in the towns and the villages.

Mr. Oldham.—The house-ridden, cripple, and decrepid class.—I would only give relief to those who have homes—houses—to which they are confined, and would collect the rest in relief hospitals. I would then relieve through the circle system making the village officers the dispensers of relief which should be in dry grain. Dry grain is to be recommended instead of money for a good many reasons.

I have three times had experience of this sort of relief (home relief), and never found the slightest difficulty in closing it. As I have said, the recipients themselves recognise the time when it should cease. I have heard objections raised to it by very high authority on the ground that it could not be closed, that it pauperizes the recipients and so on, and all such objections have struck me as being in practice entirely futile.

The Right Rev. Bishop Caldwell.—People who cannot leave their homes.—People who are unable to leave their homes will have, I fear, to be left to the care of their friends and the charity of their neighbors; but when this is found to be the case, the number of such persons will be found to be exceedingly small. Anyhow, whatever arrangements may be made, the help of friends is probably the only help they will actually receive.

With regard to both this question and the previous one, it may simplify matters if I state that, in my opinion, the gratuitous relief given by Government should be absolutely confined to the relief given to the inmates of poor-houses. Every thing beyond this should be left to private charity.

N.B.—I take the opportunity of expressing here an opinion for which I do not see any appropriate place elsewhere.

I am of opinion that under no circumstances should money be entrusted to petty village officials for distribution amongst the famine-stricken in the shape of doles of money or food. There is absolutely nothing to prevent such persons, wholly uneducated themselves and living amongst a population wholly uneducated, making the greatest misuse of the money entrusted to them. Public opinion does not yet exist amongst such classes, or if it exists is on the wrong side. No charitable native, if he wishes his charity to be useful, will make petty village officials his almoners.

MYSORE.

Mr. Ricketts.—The persons here referred to would be put upon the village grain dole. Their cases would be first inquired into and represented by the village potail and shanbogue, passed by the sheikdar and checked by the amildar and other superior relief officer. The relief would be in grain given weekly by the sheikdar through the potail or a shopkeeper, and the payment duly certified by the village punchayet. This form of relief would to all practical purposes close itself at the end of the famine.

QUESTION 32.—ORPHAN OR DESERTED CHILDREN.

What has been held to be the duty of Government in respect to orphans or deserted children, and what appears to be the correct principle to follow? What number of such children have been thrown on the State during the recent famine? What arrangements have heretofore been made for receiving and supporting them, and what has been their ultimate destination? What have been the practical results of the measures thus taken in the past? What appears to be the best system to adopt in the future?

Punjab.—Orphans will best be made over to people of their own faith. Some have been made over to missionaries, but this is opposed to the popular wish.

North-Western Provinces.—Experience similar to that of Bengal.

Bengal.—The Behar and Orissa Government undertook the care of orphans in the first instance, and afterwards made them over to missionaries.

Bombay.—Orphan and deserted children were cared for by Government. At the end of the famine some were claimed by relatives, some adopted by rich natives, some entrusted to missionary bodies. One orphanage was opened by natives.

Madras.—Fourteen European and three Native gentlemen have replied.

There is a general consensus of opinion that an obligation rests on the State to take charge of orphans and children abandoned by their parents during the pressure of a famine. At the close of distress many deserted children are reclaimed by their relatives, some few are adopted by charitable persons of all classes and creeds, and the residue are taken charge of by the Christian Missionary Societies. Wherever really respectable persons can be found willing to take charge of orphans of their own creed, this mode of disposing of them is considered to be the least open to objection.

PUNJAB.

Muhammad Hayat Khan.—It is the duty of Government to support orphans or deserted children. The people say that civil officers in famine times make over orphans or deserted children to missionaries, with the result that Hindu and Muhammadan children, without the knowledge of their parents, and while they themselves are unable to express their intentions, are made into Christians; and thus the ignorant people have suspicious ideas of the generosity of the Government. The best way of supporting such orphans, &c. would be to make them over to the persons of the religion to which the orphans or deserted children are found to belong, to be supported through them until the famine is over; when the famine is over, they should be made over to such of their relatives or family connections as can be found; or if none can be found, then to any persons of their own class or caste who are willing to support them. In the last year's calamity there were only two orphan deserted children who were sent to the Amritsar Mission with a little money from the District Local Funds for their support, but such a measure is opposed to the wishes of the people.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—To make over such children to respectable persons of their own castes or faith who are willing to support them and have sufficient means to do so, and if such persons are not forthcoming or the parent's faith is unknown, to make them over to a Christian orphanage. All orphans or deserted children should be sent to Christian orphanages. However respectable the person may be, the child he receives while there is a famine is sure to be looked upon by him as his slave. During the recent distress in this district the number of children thrown on the State was—

Muhammadans.		*Hindus.*		*Unknown.*		
Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Total.
—	3	9	17	6	28	63

In the first instance they were made over to the charge of the Court Inspector pending inquiries as to their relations. After this if there were no respectable persons willing to take charge of them they were made over to the Rev. Messrs. Johnson and Hoskins, American missionaries at this station.

The total number made over to the missionaries to be brought up at their schools as Christians to follow some trade was 63.

The total made over to respectable natives was 38.

The majority of the orphans or deserted children were Hindus of low caste. No Hindu applied for any of the children. Muhammadans of respectability would have been willing enough to accept girls of the lowest Hindu caste.

Mr. Kennedy.—The total number of unclaimed children sent to the Mission Orphanage was 15. A few were also distributed to natives who desired them. Applications are continually made to the Collector by persons claiming to be the near relations of famishing children for permission to transfer them to wealthy natives. In such cases the professed guardian generally expects to receive food or money from the grantee, and occasionally the importunities of these people are so great that the grantees have applied for permission to re-transfer the children. I do not myself see any reason for checking this transfer of children, provided that there is some security for their good treatment. A register should be kept for all such cases, the treatment undergone by the children should be inquired into from time to time, and the children be at liberty to depart whenever they please. If such a plan works well under proper regulation with voluntary transfer, there is no reason why the State should be ever burdened with the support of orphans thrown upon it. The only advantages of State orphanages consist in the security for good treatment. If this security can be otherwise obtained, the advantages of domestic training ought, I think, to outweigh the advantages of nominal Christianity.

Mr. R. J. Leeds.—As regards Hindu children of the lower castes, who form the majority of the orphans in most districts, it is impossible to apply the rule, for high cast Hindus will not take them and low caste Hindus are, as a rule, too poor to do so. The only alternative therefore is either to entrust them to Christian Missionaries or to Muhammadans of respectability.

Ch III Qn. 32.

NORTH-WESTERN PROVINCES.

Mr. R. H. Story.—The action of Government with regard to deserted and orphan children has been to allow respectable persons to adopt them. Where the numbers have been many, intimation has been sent to the different missions and orphanages throughout the country. In time the children have all been provided with homes. Until this is accomplished it is clearly the duty of the State to support them.

Seventeen orphans were thrown on the hands of the district authorities during the late scarcity. All these children have been provided with homes with respectable persons and are getting on very well, and are much better off than they ever were before. I cannot think of any improvement on the present system.

Mr. Mellor.—There is no difficulty in getting respectable Muhammadans to take charge of deserted Muhammadan children.

There is a difficulty with regard to Hindu children, and the matter has not yet been decided. If Hindus will not take them, and they will not do so as a rule, I see no reason why they should not be made over to Muhammadans. It is impossible to find out generally even to what caste they originally belonged, and the only other alternative course is apparently to make them over to some Christian orphanage.

BENGAL.

BENGAL.

Mr. Barlow.—Government has always accepted the immediate care during famine of orphans and deserted children. It is difficult to see how the practice can be changed or abandoned, seeing that helplessness demands and justifies protection. During 1873–74, 37 orphans only were finally left on the hands of the authorities in this division. Of these, 14 were made over to the missionaries for education, Government making a small grant of maintenance allowance, one died, and the rest were made over to relatives or other suitable persons willing to receive them.

The children made over to the missionaries are brought up as Christians, and are looked after until and even after they are established in life. The others disappear from observation.

The operations in this direction have been upon a small scale here. They were, as far as I recollect, of a similar character and upon a large scale in Orissa. No practical difficulty has been experienced, and I am unable to suggest an improvement upon the plan heretofore followed.

Mr. Toynbee.—In the Orissa famine the principle observed with reference to orphans was that the Government should assume in the first instance the charge of the children and make the necessary arrangements for their maintenance. This was done in consultation with the members of the Local Relief Committees, on which Europeans and Natives of all castes were represented. The balance of funds at the disposal of the Relief Committees were made over to Government on part account of the orphans, but it did not suffice to cover the expenditure. In carrying out this principle into detail it was found that the Hindu and Musulman community were not willing or able to give a sufficient guarantee as regards the future of the children, and the majority of them were therefore made over to Christian missionaries. On the 31st December 1867, there were 1,486 children in charge of guardians selected by the Local Committees. The Government paid Rs. 3 a month for each child; if a boy, up to the age of 17; if a girl, up to the age of 16. On attaining these ages the Government granted to each child of each sex a bonus of Rs. 20. All these children have been gradually absorbed into the Native Christian population, and have settled down to the ordinary pursuits of persons of their class. The principle followed in the Orissa famine seems to me to be the proper principle for future adoption.

At the close of the famine of 1874. 111 orphans were left on the hand of Government, 97 in the Patna, and 14 in the Bhagalpore division. As in Orissa, the Government made these children over to the care of missionaries, taking a grant of Rs. 40,000 from the Central Relief Committee, and giving an allowance of Rs 3 per mensem for each orphan up to the ages of 17 and 16 in the case of boys and girls respectively.

Mr. Kirkwood.—It has been held to be the duty of Government to maintain, educate, and settle in life all unclaimed famine orphans. In Bhagalpore there were at the close of operations only some 50 orphans collected together in the Soopole poor-house; relatives came forward and claimed some 20 of these, and the rest were (I think) sent to a mission school at the town of Bhagalpore.

In Orissa generally, in 1866 and 1867, there were, of course, large numbers of famine orphans. These were mostly picked up at the feeding centres, and were thence despatched to the Baptist missionaries at Cuttack and elsewhere. They were supported from the relief committee's funds, aided by a monthly grant of Rs. 2 per head from Government. As some of the native gentlemen at Cuttack objected to these children being christianised, it was conceded to them that they might open an orphanage which should be under their own management, and be supported from the committee's funds. But this orphanage was not sufficiently commodious, its numbers were never large, the management was not so good as might have been desired, and I think it became abolished before the close of relief operations.

Many of these poor orphans died shortly after their arrival in the orphanages,—they had sunk too low to recover; many managed to run away; many were towards the close of operations claimed by relatives. At the close of operations in 1867 there were in the missionary orphanages in Orissa about 1,500 orphans. The management of them was left entirely to the missionaries, subject to the control of a permanent committee, consisting of the commissioner, the collector, and civil surgeon, for the time being. Government eventually made an allowance to the missionaries at a fixed rate per head. This rate was Rs. 3 per mensem for boys up to 17 years of age, and for girls up to 16. Boys, on their reaching 17, and being then put to earn their living, were given a donation of Rs. 20; the girls received the same sum on marriage or on attaining the age of 16. The Cuttack Native-Christian community was already so large that these additions had many friends ready to receive them into their social circle. Many of the girls married the boys; but the girls were far more numerous than the boys; and there has, I believe, been since some difficulty in getting them married off. The young men of the Christian community took several of them to wife, but still there was a surplus.

The boy orphanages were separate from those for the girls, the latter being managed by the ladies of the mission. The orphans were all taught writing and reading. The boys learned carpentry, weaving, agriculture, and the trades of goldsmiths, blacksmiths, &c. From private sources lands in the neighbourhood of the town were given to the mission, villages were there constructed, and many of the more reliable of the newly-married couples were there settled. The girls learnt cooking, washing, sewing, and other useful occupations calculated to fit them to be good housewives.

BOMBAY.

Mr. Norman.—It has always been held to be the duty of Government to support orphans and deserted children, and this principle should be adhered to. During the last famine the number of such children was very few. They were received into poor-houses, where they were collected in nurseries and taken care of by old women. At the end of the famine most of them were claimed by their parents or by some other relation. A few remained who were eventually adopted by well-to-do persons. The Missionary Societies obtained possession of a few orphans, whom they are now bringing up, and this would be the best way of ultimately disposing of any children left on the hands of Government. No such cases, however, occurred at the end of the last famine.

Mr. Spry.—Beyond maintaining orphans and deserted children in relief-houses so long as they were open, Government has not done anything in this district for them. But it appears to me that if Government exacts special taxation for famine purposes the providing for these children until they can look after themselves is a legitimate charge on such taxation. During the famine several hundreds of these children were thrown on the State, but as the famine wore off numbers of them found relations and friends willing to take care of them. In the end only about 60 remained, and these were received in the orphan asylum at Pandharpur, in the Sholapur district, an institution started and maintained by private charity for the special purpose of receiving famine orphans, &c. Thus far, therefore, there has been no difficulty.

Mr. Percival.—The number of friendless orphans is quite small. Children come to the poor-houses and say they are orphans, but at the end they are generally claimed. An orphanage under private management, but receiving all castes, was started by some charitable natives at Pandharpur. Orphans were sent to it from this and the neighbouring districts, but there are only 102 children in it. Applications from respectable people on the spot to adopt orphans have been entertained, but no orphans have been sent to a distance, so that parents or friends can claim them at any time. The arrangements at the Pandharpur Orphanage are good, and it is proposed to develop it into an industrial school; if private funds should fail Government would have to take it in hand.

Mr. Bosanquet.—There were a good many deserted children here during the recent famine, but, as circumstances improved, many of them were claimed by relations. There were not more than a score or two here at the end. Of the few that survived and were not claimed by relations most are now under the care of the Bale Mission in Dharwar. I have been informed on the best authority that the care taken of the children by this Mission is in all respects everything that can be desired. Three or four are under the care of the S. P. G. Mission at Kolhapur, and five or six are in the Roman Catholic Institution at Bandora.

MADRAS.

Mr. J. G. Horsfall.—Government must maintain orphans and deserted children so long as private charity does not do so. Eventually very few orphans are left in the hands of Government. In nearly all cases they are claimed by parents or relatives or taken charge of by charitable natives. The number left under the protection of the State in this district is only three, and out of these the American Mission are willing to take two.

Clause III.—After the Ganjam famine the orphans were distributed to the three religious institutions in the district, Mr. Okley, the chaplain, taking some, the Roman Catholics others, and the Baptist Mission the rest. A lump grant was made on account of them from surplus subscription funds, and Government further contributed a monthly grant for each child up to a certain age. The orphans have been taught to read and write and brought up to useful trade, and professions, and have generally been able on arriving at maturity to earn their own living. The cost to Government now is very trifling, and will cease altogether in another year or two. Where existing institutions are willing to absorb all the State orphans this plan might be continued. It will be under very exceptional circumstances that Government will find it necessary to establish an orphanage of its own.

Mr. Price.—I do not know that any dictum has been laid down. The principle followed—and I believe it to be correct—has been that it is the duty of the State to receive and protect all orphan and deserted children. During the famine these, or children alleged to fall under this category, came upon our hands in very large numbers, and were either placed in the charge of village magistrates to be fed, or to receive the dole fixed by Government, or else were taken into the poor-houses. They were picked up by the village magistrates and the police, and found in the villages by inspecting officers. As organization progressed all orphan and deserted children on village relief, who had not friends or relatives willing to look after them, were taken into the poor-house, placed under a selected nurse, and there fed and cared for. I really could not say how many orphans and deserted children were thrown on the hands of the State during the famine. In Cuddapah a register of those actually found to be friendless was kept, and a return sent in every week to the collector. These statements are on record, but they did not show orphans in villages whose relatives were taking care of them. Here no lists were, until a very late period, kept. At the beginning of the famine orphans and deserted children were, in Cuddapah, placed in the charge of a woman selected by the tahsildar, who received a monthly payment of from 2 to 4 rupees, but I found this plan unsatisfactory and discontinued it. By far the larger number of orphans and deserted children have been claimed by relatives; a few have, I believe, been taken by charitable people and religious societies, and a very few are still left in the poor-houses. As far as this district is concerned, I consider that there will not be twenty-five of these children, if so many, on the hands of Government when the famine is over. As far as the Cuddapah District was concerned, I believe that the measures taken resulted in saving the lives of many hundreds of children and in their being, when discharged from relief, in excellent condition and spirits. In future I would, from the first, have no giving out to nurse. I am very much in favor of at once putting all children ostensibly without parents or relatives who cannot shift for themselves into a poor-house. This course would—so I found when I adopted it—bring forward the relatives or sometimes even the parents who were alleged to be dead, and would enable the officers concerned to get, at a much earlier period than the end of a famine, some definite idea of the real number of orphans and deserted children on their hands. As regards the disposal of children left on the hands of Government after a famine, I believe that the religious institutions of the country and the charitably disposed would take charge of all whom we are ever likely to have. If not, I would have a home for the girls, and put the boys upon a Government farm in order that they might be brought up as skilled laborers. They would always be able to earn a live-

Ch. III. Qn. 32.

Madras.

lihood by these means and would, to a certain extent, pay for their maintenance.

Mr. Pattabhiram Pillay.—Orphans and deserted children incapable of maintaining themselves were at all times held as a charge upon the State, till some one is found to take care of them, and, in my humble opinion, there cannot be a more correct principle. It is not difficult in India to find charitably-disposed men willing to take care of such children out of sympathy for them. There are besides several Christian institutions where they will readily be admitted in view to their being made converts. I would rather leave it to the conscience and good feeling of those in charge of such institutions to make these orphans their converts or not as they choose, but would make such children over to the first applicant who wishes to take charge of them, as the duty of Government to protect them ceases as soon as some one offers to take charge of them.

Mr. Soobien.—As regards orphans and deserted children, the duty of Government has been held to be to take charge of them and support them, and the correct principle to follow appears to be the same. I have no statistics regarding such children with me now, and am therefore unable to state the number of such children thrown on the state during the recent famine in the Madura taluk. These children were received and fed in relief-camps with the ultimate object, in the case of deserted children, of making them over to their parents when they were found. In some places such children were made over to missionary bodies with the certain result of their being converted to Christianity. This appears to me, however, to be objectionable, as the accidental circumstance of their being left parentless and friendless owing to the horrors of famine should not be taken undue advantage of in bringing them up in a religion different from that of their parents. The proper course appears to me to be to bring them up as they were found till the parents or some one of their caste willing and able to adopt and support them are found, or till they become able to support themselves, or to send them to any public workshop where neutrality of religion is observed and where a useful industry can be learnt.

Mr. Oldham.—The practical results of the measures taken with regard to the orphans of the Orissa famine of 1866 have been that the orphans have been brought up as Christians, and cut off from their own caste and village people as far as their religion and its consequences cut them off, but have otherwise fared well and been turned into useful workmen or servants.

Mysore.

MYSORE.

Mr. Ricketts.—It has been held to be the duty of Government to provide for orphans and deserted children, and this appears to be a correct principle. The number of such children thrown on the State during the recent famine amounts to about 2,050. These children have been received into a Government orphanage and thence drafted to missionary bodies and private individuals; their future maintenance up to a certain period being still a charge upon Government, except in two instances, one of Miss Anstey at Colar with 231 orphans, and one of Rai Bahadoor Arcot Narrainsawmy with 105 orphans.

As regards those orphans left still on Government, I would try the experiment of apprenticing them to potails and respectable ryots, and when ere long a market would be found for their labour, ending eventually in the more industrious becoming small ryots or farmers on their own account. If the orphans could thus be disposed of without further expense to Government, and I think this would probably be the case, then I would withdraw the Government allowance granted to missionary bodies, and others, and, if they thereupon returned the orphans, which would hardly be the case, they in like manner should be apprenticed to potails and other ryots of respectability. There is a greater difficulty about girls, and endeavours should be made to marry them off as soon as possible.

Ch III. Qn. 33.

Question 33.—Sale of Grain by Government below Cost Price.

Another form of relief, independent of a labour test, is by purchasing grain and selling it at or below cost price, and consequently below the retail market rate. Was this measure resorted to in your district under what circumstances, and with what results? Do you consider that there are any conditions under which it is proper for Government to have recourse to such a step? (This question does not refer to the propriety of Government importation generally, but of importing or purchasing in order to sell cheaper than the market rate.)

Punjab.—No experience of purchase of grain by Government.

North-Western Provinces.—Opinion opposed to purchase of grain, unless in very exceptional circumstances.

Bengal.—A large majority of opinion is in favour of Government selling grain when prices are very high, but it is held that in Behar in 1871 Government latterly lowered the price at which it sold its grain unduly, and that grain should not have been sold below 10 seers to the rupee.

Bombay.—The general opinion is opposed to the purchase and sale of grain by Government, but municipalities may do this with advantage.

Madras.—Seven European and two Native gentlemen have replied.

Grain was not purchased and sold below the market rate. The general opinion is that this should never be done except when there is no prospect of private trade supplying the market.

PUNJAB.

Punjab.

Muhammad Hayat Khan.—The form of relief described in this question is good and pleasing, and, if resorted to, would establish the Government's benevolence in the minds of the Indian population. The great reputation of the Emperor Shahjahán in a famine calamity of his time was caused by the same measure, *i.e.*, he bought grain from that part of the country where there was no famine, and sold it cheaper than the market rates in the famished part of the country. Although no such measure was

resorted to in this district, and though Government is under no obligation to have recourse to such a step, I yet think that the measure, if adopted, is pleasing to the people, and would create good ideas in their minds; and, moreover, the grain dealers, who in famine times frequently reduce the rate, and do not sell it in hope of a further rise in price, would thus be prevented from such a bad practice, and the men who have money to buy the supplies, but not so large as to support them on the dearer rates, would greatly benefit by this measure.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Mr. Story.—On one occasion at Jhánsi, in the famine of 1868–69, the grain dealers in the city of Jhánsi (belonging to Gwalior state) combined together and refused positively to sell grain at any price. The Commissioner on this had grain imported into the district, and got up from Cawnpore about 150 camel loads of grain. A bazaar was opened, and the grain sold at about cost price. This had a good effect; the grain dealers opened their shops, and never attempted the same combination. The conditions under which the importation of grain is proper for Government to have recourse to is in a case like the above, where, through the combination of a few dealers, distribution of supplies is stopped altogether. In out-of-the-way places with bad communications, and where traders are not able to meet the demand, and the stock of grain is so low that there is imminent fear of the supply getting exhausted, it would then be the duty of Government to import grain, otherwise any interference with trade and prices should be most strictly prohibited.

Mr. Gardner.—The only time I have ever seen this measure resorted to was in 1867, when I was in charge of the Himalayan district of British Garhwál. The circumstances were as follows. It was apprehended that there would be great scarcity during the hot weather and rains, especially in a region separated from the plains markets by about five marches of mountain and one or two marches of forest and valley. The hill men have, or had, intense repugnance to pass through this region during the hot weather and rains; it was known that they would rather starve than do so. Under these circumstances stores of grain were purchased in March, when grain was cheapest, at the foot of the hills, and were carried up and stored in the hills; when the period of scarcity began the grain was sold at a price to cover all expenses, or was paid away in wages on relief works at an equivalent to the regular wages of labour.

BENGAL.

BENGAL.

Mr. Hodgkinson.—In 1874 large quantities of grain were imported into Sarun by Government, and in my opinion very serious and unjustifiable interference with trade was caused by disposing of it in various ways at a rate considerably cheaper than the market rate. Not only was the power of trade greatly neutralised, but the people became demoralised and reckless, seeing the extraordinary exertions of Government, represented by its officials, to get rid, apparently, of as much grain as possible by some means or other. Besides the inducement to take advances held out by fixing a low price on the grain, the people were practically lead to believe it was almost their duty to take advances, and many of them took them recklessly, strong in the belief that a paternal Government would never demand repayment. The bitterness of feeling aroused among the people by the proceedings in realisation of these advances may be inferred from the common remark quoted by my predecessor in his annual report of 1876–77 to the effect—that they would sooner die of the famine than be again induced to take advances from Government. Coming to the district again after 3½ years, I cannot shut my eyes to the discontent which is abroad, and must regard the shock which the confidence of the people in Government has received by the direct and indirect results of the famine operations of 1874 as a grave calamity. I can conceive no condition which would justify the importation of grain by Government with a view to undersell the ordinary trader, if trade exists at all in the distressed district.

Mr. Barlow.—The measure described herein has not been resorted to in my experience. The arrangements which took place here in 1873–77, and which, at first sight, might appear to mean the same thing, were really of a different character, and originated in a different view. Government had made large importations of grain, fearing that, in the parts of the country cut off from trade, supplies would cease and prove insufficient. When prices reached a certain high standard and were in fact declared nominal, *i.e.*, no quantity of food was to be procured in the bazaar at rates quoted, then Government grain was sold at a fixed rate. The object of the measure was not competition nor to undersell the market, but to keep up supplies under circumstances of a failing market. I have no reason to think that the results were harmful.

So far as the above conditions (no supplies and no trade) have real existence in any case, Government must import or purchase and sell in order to prevent starvation overtaking all classes, those having means as well as those without; but if sufficient supplies are available in the market, I should consider the form of relief proposed in the question, viz. underselling the market, the worst possible, as it involves the offer of relief, without test or restriction, to the entire population, and must inevitably kill trade.

Mr. Toynbee.—The form of relief indicated in question 33 was adopted with marked success in the Pooree district in 1867. The Orissa famine was purely a rice famine, and, owing to the isolated nature of the province, and to the absence of any external trade with other provinces, the Government had to step in and supply the place of private trade and enterprise. It is under such circumstances only that such a step would have been, or would in future be, justifiable. The chief benefit of this form of relief in the Pooree district was the confidence it gave to the people generally. It prevented any combination among local dealers to keep back such stores as they still had in hand. The result was indirect rather than direct; for between March 1867 and December 1868 only 13,064 maunds were sold to the public in the whole district. The cost of this relief to the charitable committee by whom it was undertaken was at the rate of annas 15–8 per maund, this being the difference between the cost and sale price of each maund.

Mr. Metcalfe.—I have known instances of advances of grain being made at rates considerably below the retail market rates, as also of seed grain being sold below its market value to villagers suffering from scarcity of seed. In Behar there was no coarse rice in the bazaar for sale at all, and the Government prices were below the rates for the finer qualities. I should

say that only under conditions of collusion amongst local banias ought grain to be sold by Government below the market rate. Interference with trade generally is unjustifiable, but collusion amongst local traders is quite possible, indeed frequent; it may be quite legitimate, but may cause much distress.

Mr. Kirkwood.—In my opinion, Government, whenever it has imported or purchased grain, should never sell dearer than the market rate, should never sell at the market rate, and should always, when selling at all, sell cheaper than the market rate. It should sell at one fixed rate, unchanged and unchangeable, throughout the famine, no matter what the market rate may be. That fixed rate should be three times, or a point cheaper than three times, the ordinary rate obtaining in prosperous times. That rate should be fixed and announced in the most public way possible at the outbreak of a famine, and Government should declare its firm resolve, by having large stores in hand which it will open for sale to the public in any locality the moment the market rate rises above that rate, to keep prices at, or lower than, that rate. Not less emphatically should it declare its resolve that, throughout the continuance of the famine, so long as grain sells in the open market at that fixed rate or cheaper, not an ounce of grain except in distribution of relief shall leave its stores.

By such a measure Government can at once keep the bulk of the people from starving. It sets limits to the famine and defines the borders beyond which distress shall not go amongst that large class who, just removed from the class of day-labourers, are otherwise certain to be sucked within the vortex.

If I might venture to express such an opinion, I think some errors have marked the efforts at relieving the sufferers during the recent famine in Southern India. But, in my humble opinion, worse far than the delay in getting on foot the village relief, worse than the undesirable extent to which poor-houses were opened and cooked food was distributed, worse than the general absence of any such relief, worse than the system under which earthwork was for the most part carried on, was the error of refraining to hold in the distressed localities large stores of grain ready for disposal as above noted, and of allowing prices to range through whole districts for many months at from five to eight times the ordinary rates. That one point being conceded, I venture to think it no wonder that the calamity became uncontrollable, or that a heavy mortality ensued.

I may say that I have had experience both of Government importations for sale and importations not for sale. In 1866 the Government grain imported into the Cuttack district was so little, and such a very small remnant of that little was available for sale, that such sales were in no way operative in checking prices. In 1867, in the Cuttack district, Government imports were plentiful, and sales at fixed rates were freely carried on at numerous places throughout the distressed area, with the greatest advantage to the people. That also was the case in Bhagalpore district in 1874. But in both these cases there was a somewhat undesirable delay in opening the stores for sale. This was particularly the case in Bhagalpore, where sales should have commenced a month earlier than they did, during which month market prices were painfully high. I must also venture to regard it as a serious blemish on this measure of relief in the Behar famine of 1874, that the rates at which Government grain was sold were so often changed. The change did not merely follow the downward rates of the market—that would have been bad enough, but led by a long way the downward process. Commencing at 20lb. per rupee, a price not quite treble of the ordinary rate, at which price these Government sales were in Bhagalpore largely resorted to, Government, I think unnecessarily and unwisely, lowered its selling price, bit by bit, to double the ordinary price. Such a policy, I venture to think, calculated to turn the exercise of the most praiseworthy private enterprise in importing grain into a speculation of a most hazardous nature, leaving the ruin of the importer actually from day to day at the mercy of the Government. It is for this reason that I urge that the sales should be at a fixed rate only, never varying until the famine is over, thereby rendering Government sales only operative when the market price is higher than that rate. Prices would thus be steadied, and, far from interfering with private trade, the policy advocated would enable the private trader to calculate with accuracy the risks of his enterprise. I think the history of past famines to be conclusive in asserting that trebled prices cannot be exceeded for any time without a grievous calamity, if those prices have been caused by a failure of harvest. In districts which have had fair harvests anything like a trebled rate, owing to excessive exportations, will never, I think, be reached. If it were reached, Government interference would not in such a case be desirable. A large amount of money must have come into the district as the result of its exportations, and the high figure of trebled prices would never be long maintained. I have known of a doubled rate being temporarily brought about through exportations, but never of higher.

Mr. Kisch.—It was not resorted to in Bellary, where I was, in 1877–78. It was resorted to in Tirhoot in 1874. There we sold grain when the market rate rose higher than Re. 1 for 10 seers. My circle was on the Nepal frontier, almost due north of Mudhubani. The people were poor, the roads were bad, there were no large traders likely to import grain to any extent, and there was no large bazaar within the circle. On the whole, I think, the result was good so long as we did not give more than 10 seers for a rupee, but I am quite satisfied that the sale of Government grain should have stopped the moment the market price was cheaper than Re. 1 for 10 seers. Instead of that, we reduced the price of the Government grain and seriously interfered with trade. It is only in tracts where grain is ordinarily extremely cheap that Government would be justified in selling at so low a price as Re. 1 per 10 seers. In Bellary, where importation was carried on to the utmost power of the railway company, any attempt on the part of Government to sell grain would have been utterly unjustifiable, and would certainly have been most disastrous in its results. I have said above, that, on the whole, I think the result of the North Tirhoot sales was good so long as we sold at 10 seers per rupee, but I do not think that it was proper for Government to sell at that rate. It would have been far better to fix the full cost price of the grain at the price at which it must be sold. Government could not then possibly have interfered with trade, for private dealers can make a profit by selling at the price that only covers the expenditure incurred by Government. If this principle were adopted, Government would really only sell grain when the supply in the hand of private dealers is actually insufficient for the wants of the people.

Mr. Magrath.—Grain was largely imported into Mudhoobunnee, and sold there at 10 seers per rupee, as soon as rice went below that rate. This was done because there was little or no grain in the country, and there were no importers. The results were that there was grain; whereas, if not imported by Government, there would have been none. I consider that in cases like that of Mudhoobunnee, where the larger part of the grain had been exported and no machinery for importation existed, the action of Government was the only plan possible. By April there was no bazaar rate, as there was none but Government grain in the subdivision.

Mr. Abbott.—A most necessary measure, as it causes the local grain-holders, who would otherwise hoard their stores waiting for higher rates, to bring it into the market, enabling the district officers to obtain reliable statistics of the actual amount of grain in the country, and thus judge of the quantity necessary to import.

CENTRAL PROVINCES.

Mr. Nicholls.—In Murwara, where there was a difficulty about getting sufficient and reliable supplies in the local markets, Mr. Olpherts purchased grain on easier terms in Allahabad, but to the best of my recollection this was entirely used on our relief works and in the poor-houses. In Chanda, on account of a belief that the export of grain from His Highness the Nizam's dominions had been prohibited, an advance of Government money was given to a trader to purchase grain for the consumption of those employed on the Government relief works. As soon as this was done, all the private traders and well-to-do people took courage, and made such efforts to import grain, that little more assistance in this district was required from Government.

In Damoh, the Deputy Commissioner found the holders of grain entirely refused to sell, as they would not listen to reason, and he sent an order for the purchase of Rs. 10,000 worth of grain at Jubbulpore. Some amount was bought, and on arrival in Damoh was sold at cost price. But the sending of the order followed also by similar private orders was sufficient to bring grain again into the market; either the panic ceased, or the combination of the grain holders was broken through.

The Deputy Commissioner of Balaghat supplied the following information:—

In September wheat got dearer, and though nominally at the previous rates, was more difficult to obtain. For the workpeople on the ghats special arrangements had to be made; by the end of the month malguzars began to refuse to supply the villagers on the usual terms, and the agents of large firms at Nagpur and Kamptee would not sell. Roads were impassable, and grain was being exported by river.

Zamindars and malguzars were called in and consulted, and they placed some considerable amount of grain at the disposal of the Deputy Commissioner, which, later on, enabled the district officer to continue his relief works and maintain his poorhouses, and also to throw small quantities now and then into the markets at current rates.

BOMBAY.

Mr. Norman.—I am strongly opposed to any proposal for purchasing grain and selling it below cost price. Any such system would, undoubtedly, interfere with the trade of the country, and might lead to most disastrous results. The system was not resorted to in this district, and I can conceive no conditions under which it would be proper for Government to have recourse to such a step. Occasionally I think it may be advisable to endeavour to purchase grain in the cheapest market and retail it at a slight profit. This would break down any possible combination among the dealers. I confess, however, that I do not believe in combinations, and I think it best to leave trade to take care of itself.

Mr. Spry.—The purchasing of grain, and reselling it at or below cost price, was not resorted to in this district. Such a measure, I would think, had better be avoided by Government, as it may create false impressions regarding interference with trade. I do not know any condition under which Government would be justified in adopting it. But, at the same time, it is a very legitimate species of relief for municipalities to adopt towards the poor residing within their limits.

Mr. Percival.—Government should avoid all interference with the grain market. It happened here, and may happen elsewhere, that for a week or two there was a panic, and no traders would part with their grain at any prices at certain places. Both Government and some of the Relief Committees had to buy grain at the larger or distant markets and send it to relief works, but this was exceptional, and gave way before the first importation of grain by the railway. It would not happen again in this district.

Colonel Anderson.—Though an entire advocate of non-interference in the grain trade by Government, yet I think there are cases in which it might be desirable to purchase. First, in the case of inland districts with bad communications, after the rains have commenced, with the rail. If it was clear that famine must be prolonged some months after the setting in of the rains, it would be well, before matters had gone too far, to enter into contracts on the spot for delivery of at most say a month's food for relief houses and works at a certain price on a given date at named places or centres, or possibly to obtain possession of the grain at once and place it in store. This grain I would only make use of in extreme emergencies, if the local price rose beyond a certain point, leaving a full profit to the dealer, taking all pains to make the dealers understand this, or in case imports should cease from stoppage of roads. This measure would be the more advisable or excusable in cases in which it was known that there were large local hoards which fear for the future locked up, and of course, when imports cease, become more tightly locked up than ever. In Kaladgi last August, from closed communications, and the stoppage of cart traffic, men's backs were the sole means of import for a month or two. Considerable panic arose, and grain rose to 5½ lbs. per rupee on the works, notwithstanding that it was a matter of notoriety that enormous stocks, the accumulation of several years, were hoarded away in pits. When I was first there, from rain having fallen grain was at 10 and 11 lbs. per rupee in the local markets. In remarking to some of the most intelligent of the people that these hoarders of grain would lose heavily if they did not soon open their pits, as in a month grain would be at 20 lbs. per rupee, they answered, then, when 20 lbs. is reached they say they will open their pits, as it will be plain that the general opinion is in favour of security in the future.

Any, even the slightest, appearance of interference in the grain trade or of forestalling any great advance of prices is a matter requiring the greatest delicacy and discretion in treatment on the part of the local officers. Still I think there are cases in which the command of a small supply might be of great use in regulating the market prices and preventing panic. When, however, a main line of communication was sure to be open during all weather, I would not interfere in the slightest way with the private trade in grain. Moreover, I would, under any circumstances, do nothing anywhere having the slightest semblance of interference, present or future, in the commencement of a famine, for fear of deterring the full and early development of private trade.

MADRAS.

Mr. Longley.—No. There was no occasion for such a measure, as private trade was sufficiently active and the markets were kept fully stocked.

Government interference is inexpedient till private trade becomes too slack, and the high prices ruling fail to induce traders to import and throw grain into the

market to meet the demand. When matters come to this pass, and the market is under-supplied, Government *must* interfere ; but the interference must be confined to—

(1) use of personal influence to induce foreign traders or large firms to undertake the importation of grain.

(2) affording facilities for importation (*a*) by improving communications ; (*b*) by suspension of the *export* duty on grain ; (*c*) by grant of advance to traders willing but unable to embark on such enterprises ; and (*d*) by offering bounties on the quantity of grain imported, &c.

When these measures do not avail in keeping the markets sufficiently stocked, Government must import grain on its own account ; but it must not under-sell either the local or the adjacent markets, as, if this is allowed, it will have the effect of putting down the whole private trade and discourage private enterprise.

Mr. McC. Webster.—No such measure was resorted to in this district. The only conditions under which it would be proper for Government to have recourse to such a step would be in the event of there being absolutely no prospect of private trade supplying the market. This is not a contingency likely to occur in this district.

Rev. Newport.—The question of purchasing grain wholesale and selling it retail at less than market-rates was brought forward by a Government officer in the Salem Famine Relief Committee. I opposed the scheme on the ground that "trading" was not in accordance with the principles on which the Mansion House Fund was distributed. But I believe that, had such a scheme been successfully set on foot, the result would have been very good. At that time it was possible to buy grain at Madras wholesale, and, after paying all charges on it, to sell it at Salem under the market-rates without the loss of a single pie. A combination of merchants, or some other occurrence, had raised the local rates of grain far above those of Madras.

I am not prepared to say that Government should undertake this work. In outlying places far from railways and good roads, there may be occasions when recourse may be justifiably had to such a means, but as a general rule private speculation and mercantile competition will be quite sufficient to meet the difficulty.

Where no grain is to be had at all, the Government is surely bound to get a supply and sell it at whatever price the people can afford to give.

Major Baynes.—I would not advocate this measure as a general one, because then Government would relieve a large number of persons who are in the position to go through a time of high prices; but, as recommended in this section, I would supply grain for sale to recipients of relief on work or on the money-dole, and for use in kitchens, if I could do so more cheaply by importation than by local purchases.

Mr. Hurry Row.—The system of purchasing grain and selling it at or below cost price is bad. It is wrong in theory and injurious to the people in practice. It shuts up all ordinary shops. Wherever a combination among traders is expected, to break it down, it would be necessary to buy grain and sell it at a fair profit to the public. To sell grain at or below cost price is interfering with the market in a most imprudent manner.

MYSORE.

Colonel Sankey.—As I understand it, this question raises the whole issue between the native and European systems of relief, which, whatever our own views on the subject may be, it would appear desirable, indeed essential, to inquire into exhaustively, and decide on dispassionately. The question has also more direct bearing on the case of the late Mysore famine than would at first sight probably be supposed, as, since the transfer of the Province to British management, the theory has been (indeed, rather ostentatiously put forward at times) to govern as nearly as possible on native ideas, in order to facilitate re-transfer to indigenous rule whenever that should become necessary. That re-transfer is soon now to be carried out ; and hence the question as to which set of ideas should prevail (or, indeed, possibly should have prevailed) in the management of the Mysore famine, is deserving of attention.

To put the matter concisely, the native plea for assisting the famine-stricken by grain dole or otherwise, without a labour test,* is that the cost is simply that of the food thus temporarily supplied, and that, immediately the trial has passed, society falls back into its old groove, neither better nor worse than it had been before. To the objection that, with such universal and promiscuous charity, widespread demoralisation must be the inevitable result, the reply would probably be, that to suppose such is to exhibit ignorance of caste arrangements and obligations, which render it as totally impossible after, as it was before, a famine for any man to change his special calling, or, however he may wish it, to become a professional beggar, or indeed a waif of any description.

Although I cannot believe this to be a complete answer, after seeing the utter prostration and demoralisation which followed in the track of the kitchens so freely opened all over Mysore, it is only right that the matter from the purely native point of view should be examined and disposed of satisfactorily.

If judged by the lavish outlay† on the notoriously useless public works in all previous famines, and, it is also much to be feared, on much of the work done in suppressing the late famine, the native has unquestionably the best of the argument, judged from a purely financial point of view ; and I trust, when the past and future of the works so carried out have been fully investigated, the evidence will go to strengthen the suggestions I have ventured to make regarding the absolute necessity for a three or four years' Budget programme (as based on the effort which I made in Mysore) to prevent the recurrence of such a reproach.

* For Kublai Khan's practice in famines, see Chapters XXVII. and XXXI. of Colonel Yule's Marco Polo :—

"From those who have suffered . . . no taxes are exacted for that year—nay, more, he causes them to be supplied with corn of his own for food and seed . . . . Those who have lost their cattle . . . not only got scot-free, but get presents of cattle."

. . . . . .

"You must know that when the Emperor sees that corn is cheap and abundant, he buys up large quantities, and has it stored in all his provinces in great granaries, where it is so well looked after that it will keep for three or four years. And this applies to all kinds of corn, whether wheat, barley, millet, rice, panic, or what not ; and when there is any scarcity, he causes that to be issued."

In a note it is observed that "rice . . . keeps long if care be taken to air it and stir it about ; and although not so good to the taste or look as new rice, it is said to be more wholesome."

Native ideas in India on the subject are sufficiently well illustrated by the following notice, which has just now appeared regarding the distress in Indore :—

"Measures are being adopted by Holkar to alleviate the distress of the people in his dominions. He has opened depôts of grain in different parts of the city of Indore and elsewhere, where wheat is sold at twelve seers per rupee, and where care is taken that the purchaser buys it for an amount not exceeding a rupee at a time during the day. This plan is said to work well, and many people belonging to the Railway, who are not residents of Indore, avail themselves of the advantages of it. Another precaution which his highness has taken to save his people from the pinch of scarcity is to have always a sufficient supply of grain in his dominions ; and this he manages by putting difficulties in the way of exportation. With a view to this, he levies an impost of a rupee for every *maun* (six maunds) of grain that is exported."

† One example will suffice: "Of the famine roads which in "1874 were undertaken in Bengal, about one-half had to be left "unbridged and unfinished. These have since fallen into a "condition of utter uselessness" (see paragraph 24 of his Excellency the Viceroy's minute of 12th August, Famine Blue Book, No. IV. page 114).

Mr. Ricketts.—I do not know of any conditions under which it would be proper for Government to administer relief by purchasing grain and selling it at or below cost price. This measure was resorted to, not by Government, but by private individuals, but I could not understand what safeguards could be invented for preventing the same individual under the guise of other nominal purchasers making repeated purchases, and thus making a profit out of the transaction. If this abuse could be guarded against, and it might perhaps be prevented by benevolent private persons selling on a small scale, then I think much good might be effected by such a measure as enabling the poor without having recourse to actual charitable appeal, to purchase as much grain as they did before when it was cheaper. It would be highly objectionable, I think, for the Government itself to attempt to organize such a scheme.

QUESTION 34.—PROPORTION OF RECIPIENTS OF RELIEF TO THE WHOLE POPULATION.

Section 3.—Miscellaneous.

State as nearly as practicable the proportion that the whole number of persons that were in receipt of relief in any form in your district on a selected day, or on the average of some week, when the recent famine was at its height, bears to the whole population. Of the whole number so receiving relief, what were the proportions under the following heads :—

1. *On relief works* - - - - - - { *Adult males.* „ *females.* *Children.*
2. *Artisans specially employed (if any) as such* - - { *Adult males.* „ *females.* *Children.*
3. *In poor-houses (resident)* - - - - - { *Adult males.* „ *females.* *Children.*
4. *Relieved non-resident (paragraph 30)* - - - { *Adult males.* „ *females.* *Children.*
5. *Relieved in villages (paragraph 31)* - - - { *Adult males.* „ *females.* *Children.*
6. *Others, not resident* - - - - - - { *Adult males.* „ *females.* *Children.*

Replies not summarised.

NORTH-WESTERN PROVINCES.

		Proportion.
Mr. Colvin, Bijnor.—Persons on works and in poor-house.	25,771	3·35 per cent. on the whole population (737,152.)
On relief works.	8,031	31·16
	8,738	33·91
	6,962	27·01
In poor-house.	456	1·77
	843	3·27
	741	2·88

Mr. Sandys, Budaun.—The proportion that the whole number on receipt of relief when recent distress was at its height bore to the total population was eight per mille :—

1. On relief works—
   - Adult males - - - - 3 per 1,000
   - „ females - - 2 „
   - Children - - - 1 „
2. Artisans - - - Nil.
3. In poor-houses—
   - Adult males - - - 5 in 10,000
   - „ females - - 6 „
   - Children - - - - 5 „
   - Heads 4 and 5 - - Nil.
   - Six others not resident - 8 in 10,000

This is the per cent. on the total number thus relieved, as the number of adult males, females, and children is not ascertainable from the records kept by the Ujhání municipality.

Mr. Tracy, Moradabad.—During the last week of September 1877 the daily average of persons in receipt of relief was as follows :—

1. On relief works	Adult males	2,106
	„ females	1,511
	Children -	1,729
		5,346
2. In poor-houses	Adult males	138
	„ females	102
	Children -	59
		301

There was no other form of relief. The total daily average on relief was, therefore, 5,647. According to the last census the population of the district of Moradabad was 1,122,437. The proportion of persons in receipt of relief was therefore 5·03 per mille.

Mr. Cornwall, Cawnpore.—The greatest number of people on the relief works in this district was 7,684 in the week ending 31st October 1877 :—

3,858 men.
3,017 women.
809 children.

Total - 7,684, or ·63 nearly of the whole population of the district.

Ch. III. Qs. 34.

North-Western Provinces.

Mr. Story, Jalaun.—The proportion the whole number of persons receiving relief in any form, on the average of a week taken in July 1878, bears to the whole population is ·48.

The proportion under the following head is:—

				Total No.	Proportion.
1. On relief works	Average of week ending 14th July 1878.	Adult.	Males	512	·12
		"	Females	800	·20
		"	Children	471	·12
				1,783	·44
2. Artisans specially employed (if any) as such.	In July 1878 nil.	"	Males	—	—
		"	Females	—	—
		"	Children	—	—
3. In poor-house (resident)	14th July 1878.	"	Males	36	·01
		"	Females	95	·02
		"	Children	44	·01
				175	·04
4. Relieved, non-resident (para. 30).		"	Males	—	—
		"	Females	—	—
		"	Children	—	—
5. Relieved in villages (para. 31).		"	Males	—	—
		"	Females	—	—
		"	Children	—	—
6. Others not resident		"	Males	—	—
		"	Females	—	—
		"	Children	—	—

Colonel Chamier, Bara Banki.—On the 7th August 1878 there were on the relief works 10,725 persons. Of this number the proportions were—

Adult males	0·375
" women	0·347
Children	0·240

of the whole population calculated at 1,115,042.

In the two poor-houses on the same day there were—

Adult males	262
" females	470
Children	320
	1,052

Mr. Blennerhassett, Rae Bareli.—The whole number of persons in receipt of relief in all forms on 11th July was 20,435, being 2·06 on the total population of the district, and 7·58 on the population of the Drigbijaiganj tahsíl, where the famine chiefly occurred.

Of the whole number the proportion under the following heads were:—

		On total population.	On Drigbijaiganj tahsíl.
Relief works	Adult males	1·97	7·23
	" females	2·44	8·92
	Children	1·59	5·89
Poor-houses	Adult males	·09	·36
	" females	·11	·43
	Children	·02	·08

The distribution between adult males and females in poor-houses is approximate, no exact figures being attainable.

Bengal.

BENGAL.

Mr. Barlow.—I give for the district of Bhagalpore the nearest information available upon the points asked. The figures are not more than approximately correct.

Bhagalpore district.

Daily average of the fortnight ending 24th July 1874 on relief works.	Total population.	Proportion of the number relieved to the population.
22,115	1,826,290	1 is to 82

Resident and non-resident at Relief Centres and in Poor-houses.

Daily average for the month ending 24th July 1878.		
854	—	1 is to 2,138

Relieved by other means (non-resident).

Daily average for the month ending 24th July 1878.		
69,323	—	1 is to 26
Total 92,292	—	1 is to 19

Note.—The proportion that the number relieved bears to the whole population of the district is given as asked. It may, however, be noted that the relief operations were almost exclusively confined to the Soopole and Mudhepoorah subdivisions, the population of which places aggregates 956,833.

Mr. Worsley, Mozufferpore.—In the height of the famine in 1874 the returns received from circle officers did not show the numbers of males, females, and children separately. For the fortnight ending 30th May 1874 the average daily number of labourers employed on relief works in Mozufferpore, Hajeepore, and Tajpore subdivisions was 190,914, and the number of persons receiving charitable relief 12,926. The population of these three subdivisions in 1874 was 2,109,447, so that about 10 per cent. of the population were in receipt of relief.

Mr. Hodgkinson, Sarun.—About the 20th June 1874 there were 237,312 persons in the Sarun district receiving relief—independently of those to whom grain advances were being or had been given. This represents 11·5 per cent. of the total population. I find it impossible to classify the number relieved correctly under the heads given in the question, as information is not available. The following is the nearest approximation I can give:—

1. On relief works	Adult male	109,328	
	Female	62,243	
	Children	46,526	
			218,097

2. Artisans specially employed on such (weavers)	3,109
3. In poor-houses receiving cooked food and probably for the most part resident	1,536
4. Relieved non-resident *purda nasheens* spinning thread (females)	4,944
5. Relieved in village	304
6. Other not resident receiving food (not cooked)	8,704
Gratuitously receiving money	618
Total	237,312

Mr. Kirkwood.—In Cuttack (1867) the highest numbers were relieved during the middle week in August. The daily average was then very approximately as follows:—

—	Total.	Males.	Females.	Children.
(1.) Earthwork (light labour) (approximately)	6,000	300	4,500	1,200
(2.) Artisans specially employed (weavers)	4,000	4,000	—	—
(3.) In poor-houses (resident and non-resident)	9,000	1,500	5,000	2,500
(4.) and (5.) Relieved gratuitously in villages	45,000	5,000	25,000	15,000
(6.) Non-residents relieved by spinning	8,000	—	8,000	—
(7.) Orphans relieved in orphanages	870	—	—	870
Total by Relief Agency	72,870	10,800	42,500	19,570
Add by Public Works Department and Irrigation Company's works	30,000	20,000	7,000	3,000
Total	102,870	30,800	49,500	22,570

Add relieved by sales of Government grain about 70,000 persons.

The total of 173,000 persons was, on a population of then about 1,300,000, about 13 per cent. But in 1867 much of the Jajpore subdivision, with a population of 450,000, was comparatively free from distress. If 300,000 is therefore deducted from the distressed population, the percentage would be about 17.

In Bhagalpore district, north of the Ganges, the largest numbers were relieved about the 20th of July 1874. The numbers then were approximately as follows:—

—	Total.	Male.	Female.	Children.
(1.) Light labour earthworks	23,000	2,600	15,400	5,000
(2.) Weavers	1,200	1,200	—	—
(3.) In poor-houses (residents)	700	200	280	220
(4.) and (5.) Relieved gratuitously in villages	55,000	10,000	25,000	20,000
(6.) Non-residents relieved by spinning	6,000	—	6,000	—
(7.) Relieved by labour at grain golahs	900	900	—	—
(8.) Public Works Department and Court of Wards	25,000	20,000	4,000	1,000
(9.) Private works	4,000	2,000	1,500	500
(10.) Grain advances made by Government	80,000	—	—	—
(11.) Grain advances made by Court of Wards	20,000	—	—	—
(12.) Grain sold at Government stores	200,000	—	—	—
Total	415,800	—	—	—

This was about 52 per cent. on a distressed population of 800,000, varying from 10 per cent. in the less distressed parts to 80 and 90 per cent. in the more distressed pergunnahs. Without sales and advances the percentage would be about 14 on a population of 800,000. I have elsewhere (chapter II., question 5, and chapter III., question 1) spoken of the percentage relieved in the worst times in Bhagalpore as being 12. But that percentage has reference to the worst three months, and not to any particular day.

These tables, though representing the greatest aggregate total of relieved at any period, do not necessarily represent, and indeed in many cases do not represent, the largest number at any time under each individual relief heading. It was often the case that as the numbers on one relief fell off those on another increased.

Mr. Magrath, Madhobhani.—The reports, as contained in the papers I have with me, are not sufficiently clear to give the full particulars required. I can only give totals—

Population at the commencement of the famine, probably including Nepaulese and other outsiders	700,000
1. On relief works	495,000, or ·7 of the population.
2. Artizans	Not separately accounted for.
3. 4. 5. 6. Receiving gratuitous relief	46,000, or ·066

In all 541,000, or little less than four-fifths of the population.

The details asked for are not now clearly to be made out; but, from a Public Works return, I find that the proportion of persons employed was nearly three men to two women and one child. The proportion of children is of course extremely small, but by that time a large number of advances had been made, and many of the women and children who would have had to come on the works were saved from doing so. Later on, when the ticket register came on, the proportion of people who received relief at their homes was 14 to 1 who was in the poor-house. Even this does not show the artizans and the women doing spinning work, nor does it show the number of people who received advances to carry them on.

Mr. Lowis, Dinajpur.—I subjoin the numbers in receipt of relief for the fortnight ending 15th June 1874. The population of the district is about 1,500,000, so that nearly half were on our hands at the height of the famine; the larger proportion, however, being on the works. Even of those under heading 5 a large number was employed in spinning thread, making cloth, &c.; those under heading 1 being only those employed in earthwork, on roads or tanks. The numbers in receipt of real gratuitous relief, for which no return in any shape was exacted, were never great, but they were never shown separately. All relief was divided into two heads; that afforded by the works, where every individual was supposed to earn his day's wages, and charitable relief, where mere subsistence was given, and some return exacted if possible. It should be borne in mind that the women and children were in receipt of daily wages, as were some of the men, such as overseers, those employed in dressing slopes, &c.; but even from those in receipt of daily wages some sort of piecework was exacted. The majority of the men were on task-work, so much money for so many cubical feet earth excavated.

1. On relief works	Adult males 37,787 ,, females 22,843 Children 12,906
2. Artisans	None.
3. In poor-houses	Resident, none.
4. Relieved	Non-resident, none.
5. Relieved	In villages, 22,460
6. Others	Non-resident, none.

CH. III. QN. 34.

BENGAL.

Mr. Whinfield, Burdwan.—At the beginning of August 1874 we had 65,000 on charitable relief, receiving rations of cooked food, about 5,000 on road works, and probably an equal number employed by persons who had taken advances under the Land Improvement Act; and we had given advances of grain to about 3,500 cultivators. Also we were employing, perhaps, 1,500 artisans and others. I cannot give exact figures, as I have not the full returns by me. The percentage on the whole population (2,085,000) was thus nearly four. The large majority of those fed at the food centres consisted of women and children and sick persons.

BOMBAY.

BOMBAY.

General Wilkins.—Southern Division.

STATEMENT showing the Proportion that the whole Number of Persons in the receipt of Relief on Relief Works on the 9th June 1877, when the Famine was at its height, bears to the whole Population.

No. I.	Public Works.				Civil Agency Works.	Grand Total.	Population.	Proportion bearing to the whole Population.
	Males.	Females.	Children.	Total.				
Kaladgi	25,570	35,109	14,572	75,251	6,821	82,072	816,037	1/9·94
Dharwar	21,536	27,303	8,146	56,985	2,037	59,022	988,037	1/16·74
Belgaum	10,945	13,607	5,834	30,386	2,332	32,718	938,750	1/28·72
Ratnagiri	1,067	762	315	2,144	255	2,399	1,019,136	1/424·81
Canara	235	352	109	696	200	896	398,406	1/444·64
Kolhapur	2,227	3,699	1,288	7,214	29,911	37,125	1,373,938	1/37·008
Sawantwari	—	—	—	—	149	149	190,814	1/1280·63
Savanur	—	—	—	—	154	154	15,757	1/102·31
	61,580	80,862	30,264	172,676	41,859	214,535	5,740,875	1 to 26

STATEMENT showing the Proportion that the highest Number of Persons on any one day, but not the same Day, in the receipt of Relief on Relief Works in the several Districts, when the Famine was at its height, bears to the whole Population.

No. II.	Dates.	Public Works.				Civil Agency Works.	Grand Total.	Population.	Proportion bearing to the whole Population.
		Males.	Females.	Children.	Total.				
Kaladgi	1877. 11th Aug.	33,801	53,475	21,569	108,845 * 1	13,731	123,277	816,037	1/6·61
Dharwar	9th June	21,536	27,303	8,146	56,985 * 5,884	2,037	64,906	988,037	1/15·2
Belgaum	12th May	13,425	16,014	6,748	36,187 * 5,651	4,063	45,901	938,750	1/20·45
Ratnagiri	3rd Feb.	915	357	145	1,417 * 982	2,345	4,744	1,019,136	1/214·82
Canara	19th May	1,455	2,035	701	4,191 * 893	1,549	6,683	398,406	1/60·06
Kolhapur	16th June	187	209	175	571	42,709	43,280	1,373,938	1/31·74
Sawantwari	16th June	—	—	—	—	291	291	190,814	1/655·72
Savanur	21st April	—	—	—	—	746	746	15,757	1/21·12
		71,319	99,393	37,484	208,196 * 14,111	67,471	289,778	5,740,875	1 to 20

* These figures show the difference between manuscript and printed statements received by the Superintending Engineer, S. D.

Mr. Propert, Khandesh.—The following numbers are taken for the week ending 25th August 1877, when the number of people receiving relief was at its height. The numbers on civil works were then much larger than at other times during the scarcity, as the emergent work which I had to start near Dhulia (mentioned in para. 7, Chapter III.) was then in full swing. The total numbers clearly show that Khandesh (as I have

frequently stated) suffered from scarcity, not from famine.

Relief Works.	Public Works Department Agency Persons employed.	Civil Agency Persons employed.
Total	8,312	9,857
Charitable Relief	—	3,256
Grand Total	8,312	13,113

The population of the district may be put down at about one million. The percentage being relieved at the date above mentioned was, therefore, 2 per cent.

Mr. Spry, Kaladgi.—Taking one week (4th August 1877) during the height of the famine, the proportion that the whole number of persons that were in receipt of relief of all descriptions bore to the whole population was just one-fifth. But it must be remembered that very large numbers of persons from foreign states received relief as well as our own people.

Of the whole number seven-tenths were on relief works and in the following proportions:—

Adult males	$\frac{1}{5}$
„ females	$\frac{1}{3}$
Children	$\frac{1}{7}$

The remaining three-tenths were on all other descriptions of relief; but without searching the records of many establishments and offices now finally closed, and the members of which are dispersed all over the country, it would be impossible to give details as asked for concerning them. I can only say that those receiving relief at poor-houses and villages, and specially employed, made up this residue.

QUESTION 35.—EMIGRATION AS A MEASURE OF RELIEF.

Has Government ever attempted to organise emigration, permanent or temporary, from districts suffering from famine to other parts of India or foreign countries as a relief measure? if so, with what success? Under what circumstances could any such emigration be organised or encouraged? To what extent has emigration been resorted to by the people voluntarily? Have any gone beyond sea? Have any permanently gone off to settle in other parts of India? How many (approximately) left their district on a temporary expedition to search for food or employment elsewhere during the recent famine? Did they go alone or with all members of the family, and with their cattle and property? Where did they go to, and were their hopes of alleviating their distress realised? How many (approximately) have not come back, and how many are supposed to have died?

Punjab and North-Western Provinces.—There has been no organized emigration. In 1877–8 a considerable number of people with their families and cattle went to the Terai, Malwa, and the Central Provinces. They mostly returned. The emigration from Gorahhfour to the Colonies in 1878 was double of that in 1877. *See* Capt. Pitcher on Emigration.

Bengal.—In 1873–4 unsuccessful attempts were made to organize emigration from Sawan and Tirhoot to Assam and Burmah. None other is mentioned.

Bombay.—An offer was made by Government to transport people to the Central Provinces, but was not accepted. No other attempt has been made. Voluntary emigration went on largely in the famine to Central India, adjoining districts, the Ghat forests, &c. The result was not very favourable, but the proportion who died is not known.

Madras.—Thirteen European and two Native gentlemen have replied.

The Government do not appear to have organised any system of emigration beyond sea during the recent famine in the Madras Presidency. The return of emigration promoted by the ordinary agencies during the 14 months ending November 1877 shows that with the exception of that to Ceylon the average number was not exceeded. A large number of labourers were moved from Bellary and Cuddapah to the Buckingham Canal, and there were movements of distressed people from district to district.

NORTH-WESTERN PROVINCES.

Mr. Sandys, Budaun.—Government has not attempted to organise any emigration from this district, which is not so densely populated as to render it advisable to encourage any such measure.

The office records show that emigration to the following extent only has taken place since the Mutiny:—

Men.	Women.	Children.	Total.	Destination.
156	78	82	316	Demerara.

During the distress in the cold weather of 1877–78 about 4 per cent. of the people of this district left in the hopes of getting a living in the Tarái parganas or on the left bank of the Sarda river. Most of the emigrants took their families, cattle, and property with them, but failed to realise their hopes. It is said that about two-thirds have returned, but there has not been sufficient time to make full inquiries on this or to ascertain what is known as to the fate of the remainder. In fact, the actual number of those who left is conjectural, no census having been taken.

Mr. Lawrence, Agra.—The North-Western Provinces Government has never attempted to organise emigration.

If a famine is not general, but is confined to certain parts of the province, persons might be sent to that portion of the country where prospects are good.

At the time of famine people emigrate voluntarily in great numbers.

I do not think they have gone beyond the seas. Some might have settled in other parts of India. Not more than four or five per cent. left their district in search of food or employment in the recent famine; the majority of them took their families and cattle, if they had any. They wanted to go to Malwa, but their hopes of alleviating their distress were not realised.

Mr. Story, Jalaun.—I am not aware of Government evehaving attempted to organise emigration during times of famine. I think if famine became very severe in places where the population was excessive, a system of emigration to other places wanting in population might be organised with much advantage. It is one of the first signs of famine in these parts

—the people emigrating to more favoured lands. When the pressure of famine is over they mostly return to their homes, but not all, as many are known to have permanently settled in the places they have gone to. None have ever gone beyond the sea that I am aware of. This part of India is so far from the sea coast that the people are not likely to travel so far. From a return made out in October 1877, 36,394 persons and 12,780 cattle left the district temporarily for the south (Central Provinces and Malwa) in search of food and employment; 20,444 persons and 6,196 cattle had returned to their homes by the 15th October 1877. No subsequent returns were made out, but it is believed most of the people who emigrated had returned to their homes by March 1878. I cannot tell how many died, but I should say not many, as the people when they left the district were not as a rule in very distressed circumstances.

Mr. Spedding, Gorakhpur.—No attempt has ever been made to organise emigration from this district as a measure of famine relief. In the event of widespread and general distress likely to be of long duration, my opinion is that a well-organised system of foreign emigration would be one of great value.

The following table gives the total numbers who emigrated from this district from 1864 to July 1878:—

1864	236
1865	393
1867	64
1872	576
1873	2,059
1874	940
1875	768
1876	217
1877	981
1878 (half year)	967

The above emigration has been voluntarily to 10 different colonies. A glance at the figures will show how much the number increased during the years of distress, 1873, 1877, and 1878. No information can be given regarding the numbers who leave the district on temporary expeditions in search of food or employment. The number of such is always large in the north, where the tenants and labouring classes are ready to cross over into Nepal, if they think there is a chance of bettering their condition. Of the number who emigrated to foreign countries about 15 per cent. take their families with them.

Captain Pitcher, Lucknow.—Emigration is left in Oudh in the hands of "recruiters," as they are called, who are under contract apparently to supply a certain number of coolies. These recruiters are seldom natives of the province, being usually men from Bengal. At one time it was my duty, as Assistant Commissioner at Lucknow, to register emigrants, and I took a good deal of interest in the matter, an interest which has never abated.

The crying want of India is capital. Every road whereby capital can be drawn into the country should be carefully watched and made easy in every way possible. Emigration is one of these roads. Thousands of absolute paupers are sent out only to return to their villages richer in many cases than the owner of the whole village. Men who, had they remained, would have swollen the famine death-roll or lived at the expense of Government are by emigration, at no cost whatever to Government, converted into independent men, contributing as employers of labour and spenders of money to a certain degree (however infinitesimal) towards relieving the State burdens.

Yet this road is choked with obstacles from end to end. The system of contracts leads to the recruiters becoming unscrupulous as to how or what manner of recruits are obtained, so long as the stipulated number are collected within a certain time. Unscrupulous proceedings have but too often brought recruiters into collision with the magistracy, and have engendered on the part of district officials very strong prejudices against recruiters and their doings, a feeling which the police have in many instances taken up very bitterly. Then the promises made to the recruits are, I fear, not always carried out, while there are matters connected with their transit to the colonies, and capable of remedy, which, if generally known, would have a deterring effect on emigration. The chief obstacle, however, to emigration on a large scale is the dread of the journey and the absence of referees from whom intending emigrants could obtain trustworthy information.

My attention was first attracted in 1869 to the subject by observing a Bengali wandering about the kutcherry with a mob of wretched-looking creatures; and making inquiries, I found that he had been detained two days waiting the pleasure of some clerk in the office. I obtained permission after that to supervise the registration, and for about two years registered batch after batch to the number of some hundreds, so that I was able to get a fair idea of the class of people who went, and why they went. Almost without exception, men and women were physically of the lowest type in the district, and driven to emigrate through want. They had evidently but a hazy idea as to where they were going. As an instance of the difficulties of the recruiters, I may state that one day, just when a batch of emigrants were ready to start for Calcutta, a native inspector of police went to the recruit barrack and shouted out, "You are all going to be made Christians; those "who wish to return to their homes may go, I give "them leave," and off they all went.

Since 1871, having been employed in other duties, I have not seen much of emigration, but in May last an incident occurred which seems worth recording. During a morning ride I came across a well-to-do looking Brahman walking by a laden bullock cart (driven by his son, a boy some 9 or 10 years of age), and on his way to the city markets. Happening to ask the man a question, I was surprised by receiving a reply in broken English, and entering into conversation I found that the man must have been one of the emigrants registered by me in 1868–69 for Demerara, driven to emigrate, no doubt, by the scarcity of 1868–69. His story was that he left India an absolute pauper, owning (as he himself put it) nothing beyond his Brahmanical string and a wife and family, which latter he left in charge of a neighbouring money-lender; that after five years, on applying for a free return passage, which he had been led by the recruiter to expect (and which when registering emigrants I had also understood to be promised to them), he was told he must pay his own fare. This necessitated his working on another year or so, after which he paid his own way, and arrived at his home after seven years' absence, with about Rs. 700 to the good. Out of this sum he assured me that he paid the money-lender Rs. 500 for the keep of his family during his absence, and with the rest set himself up with cart, bullocks, and implements, and took a lease of some land. Of his prosperity, his personal appearance at a time when want was rampant was sufficient evidence. Pointing to the boy driving the cart, the man said he had left this boy a mere infant, returning to find him strong enough to help at farm work. Adverting to the sum paid for his family, he evidently thought he had paid handsomely, but there was not the least sign of anything like grumbling in what he said; rather, on the contrary, he seemed thoroughly grateful to the man who had so faithfully trusted him during so long an absence. As regards his treatment while an emigrant he appeared thoroughly satisfied and happy, save on two points, on which, however, he seemed to lay little stress. One was that he had not got a free return passage, and the other was that so soon as they left India Brahmans were forced to eat at the same dish with other emigrants of whatever caste. As may be supposed (to those who know village life in Oudh), an inkling of this fact would seriously impede the

emigration of all save the very lowest in the social scale, whereas the emigration of strong healthy men, who would earn their capital quickly and return to spend it judiciously, is what should be aimed at.

In 1875 the subject of emigration was under discussion, and I then suggested what I still think would be a most important help to emigration.

If the treatment of emigrants during the voyage or while in the colonies has any objectionable features, we are bound to afford intending emigrants a full knowledge of what those features are; while, on the other hand, if the treatment of emigrants is uniformly good, and there is no serious fault to find, the sooner some of our starving poor are made acquainted with the true facts of the case the better.

To afford the people the best means of obtaining this knowledge I would select intelligent, fairly educated men, one from each district, say, or about 60 in all from the North-Western Provinces and Oudh, place them under some trustworthy officer of the rank of Deputy Collector or Extra Assistant Commissioner, and who from long residence in the country would have a thorough knowledge of the language and customs of the people, and would be able to protect them on the journey, and I would then send them in an ordinary emigrant ship, free of course of all expense, to the colonies which require labour, give them sufficient time to make ample inquiries on all points, and then bring them back to their homes, giving some suitable bounty. After that I would appoint these men as recruiters, allowing so much per head for every healthy recruit. The registration of a recruit should be carried out in the district in which the recruit resides, and no other. The recruiters under this system would travel about in their own districts and take any men willing to emigrate to the tahsil, where, after identification of the men as *bonâ fide* district residents by some third party known to the tahsil officials, their names would be registered.

From time to time, as recruits were required, the Calcutta agent could send to the magistrate of the district a brief statement of the number required and the terms offered, along with a sum sufficient to cover the expenses of the men to Calcutta or elsewhere. The magistrate would inform the district recruiter and fix a date for candidates to appear for medical examination. The recruiter would give his men warning, and the recruits passed would be sent off without further delay. Beyond perhaps a day's food for those attending for examination but failing to pass, all the expense at present incurred of keeping emigrants for days together in barracks would be saved, all the odium of kidnapping and entrapping people under false pretences which the present system labours under would be removed, and the colonies would find their return in the superior class of men obtained.

From one return I observe that "of 414 souls "embarking for India in one ship, 240 adults de-"posited Rs. 96,000 for transmission to India, besides "a considerable amount of coin and trinklets en-"trusted to the Surgeon Superintendent's care." Say, in round numbers, that 250 people after a ten years' residence returned with a lakh of rupees, and that each year brought a similar number and a similar sum into each district, can it be doubted that, by the introduction of all this capital, a vast, though gradual, benefit would accrue to the country?

The death-rate may be taken at 30 per thousand per annum, so that, of 350 emigrants leaving the districts for ten years, at least 250 ought to return.

Can any officer with any knowledge of the country assert that each district could not spare 350 emigrants per annum? I, myself, should say that each district could, if necessary, spare 1,000 per annum, particularly when one remembers that after rotation had once set in there would be no actual loss, as the 30 per thousand dying yearly would equally succumb if they remained at home.

To a gentleman who was collecting at Trinidad subscriptions for the Bengal famine, a coolie replied: "If you want more, tell the agent at Calcutta to "send plenty of coolies to Trinidad, where, if they "work, they won't starve."

For 250 men to return with a lakh requires but Rs. 400 per head, while the Brahman I have referred to before brought back nearly double that sum in less than 10 years.

Arguments in favour of emigration frequently meet with opposition from officers who say that India has waste lands of her own, on which such emigrants might be better employed. This would be very true if every emigrant were a small capitalist; but what is the use of talking of the waste lands of India for men without capital? and it is only of the men without capital that I would favour the emigration. My single Brahman has, I fancy, made more of his venture than Government has made out of the big Charwa jungle scheme.

As to the waste lands of India, no one could be more anxious than I am to see them brought under the plough, but paupers are of no use to that end, and, besides, the country can spare men both for emigration and for waste lands; indeed, the emigration and immigration advocates ought to meet each other half-way.

A very large proportion of the emigrants are tempted by grants of land, &c. to remain in the colonies. A magistrate when despatching emigrants should have the power of being able to promise them a certain number of acres of land rent-free for five or ten years for every Rs. 100 brought back by the emigrant as capital.

There are other points, such as passing letters to and from emigrants free, making the recruiting agent visit the emigrants' families, arranging for family payments, &c., on which I need not enlarge here, as it will be useless doing so until it has been decided to alter the present system.

Captain Currie, Lucknow.—The following number of persons have emigrated during the past four years to the following places:—

—	1874-75.	1875-76.	1876-77.	1877-78.
Demerara	95	236	118	571
Natal	149	43	56	55
Trinidad	54	40	5	255
French West Indies	—	14	—	—
Dutch Guiana	—	—	—	40
Jamaica	—	—	—	72
Grenada	—	—	—	94
St. Lucia	—	—	—	47
Total	298	333	179	1,134

I cannot say without lengthened inquiry how many persons left the district on a temporary expedition to search for food or employment elsewhere during the recent drought, where they went to, or whether they were successful, how many have not come back, nor how many are supposed to have died.

Mr. Quinn, Hardoi.—There is ordinarily no emigration from this district. To encourage emigration simply because a famine is raging is, in my opinion, an expensive way of affording relief. It often, too, inflicts a permanent injury to the district by still further reducing a population already thinned by famine. Emigration should only be encouraged in over-populated districts. As regards voluntary emigration, the famine in this district was not sufficiently severe to induce wholesale emigration. A great number of petty cultivators, farm labourers, and the like left the district. They went singly, leaving their families behind them, as a rule. Some went to relations and members of the biradari living in other

parts of the country, but the bulk of them started on an aimless journey in search of work. I have no statistics as to the number who left the district and the proportion which returned. All meant to return, but a large proportion never did. Immense numbers of cattle were driven off to the tarái across the Chauka in search of pasture. Although their prospects seemed hopeful enough, yet at least 75 per cent. of the cattle perished. The fear that their cultivators will abandon the village and never return is in this district a strong incentive to the zemindars to aid them to the utmost of their power. The cultivators, being nearly all without rights of occupancy, have no particular tie binding them to their village.

Bengal.

BENGAL.

Mr. Barlow, Bhagalpore.—No attempt of the kind has been made in any districts of this division at the time of or in connection with famine. The preference for home and the prejudice against emigration, founded upon ignorance and fear, which the people manifest at ordinary times, is too strongly developed for any sudden effort to prove successful in the way of making them move. I believe, however, that if the conduct of emigration were undertaken by Government, and efforts were made to teach the people the truth upon the subject; above all, if successful emigrants returned to the localities where they were known, and reported favourably of the "unknown land," emigration would rapidly become popular. A few hundred coolies are annually registered from the districts of Monghyr* and Sonthal Pergunnahs; a few go to the Mauritius. I do not know of people from this part of the country permanently going off to settle in other parts of India. Nothing was remarked or made known regarding people leaving these districts in 1873–74.

Mr. Toynbee, Patna.—The only attempt made hitherto to organise emigration as a measure of relief was that made by the Bengal Government in the famine of 1873–74.

In November and December 1873 attempts were made to collect, in the densely peopled districts of Sarun and Tirhoot, a large number of families willing to emigrate to Assam. The result of these attempts showed that, unless liberal bounties were allowed, and a regular and expensive recruiting staff was maintained, no perceptible relief would be afforded. The attempt was accordingly abandoned. The usual emigration agents employed by planters in the tea districts were unusually active, but no emigration to the tea districts took place which had the remotest effect on the famine. In January 1874 an attempt was made to induce people to emigrate from Bengal to British Burmah. An officer acquainted with emigration affairs was deputed to superintend all the arrangements, and the district officers of Bengal were made his agents to procure emigrants and assist them in starting. The experiment was continued for eight months with the following result: 5,040 persons emigrated to British Burmah at a cost to Government of nearly Rs. 20 per head. Of the above number 3,479 went from Calcutta and adjoining districts, 1,199 from Behar, and 87 from Chota Nagpore. None went from the northern districts of Bengal. As a measure of famine relief, it can hardly be called a success that 5,040 persons only were induced to emigrate from among a population of over 64,600,000 (excluding Assam). The fact is, that the people of Bengal are quite averse to leave their homes even under circumstances of the greatest pressure, and any attempt at State emigration would be quite sure to end in failure. The chief minister of Cooch Behar not long ago attempted, quite in vain, to induce families to emigrate there from Burdwan, his native country, and cultivate excellent virgin soil at low rents. To the majority of the inhabitants of Bengal the village in which they are born is the village in which they die, and they seldom make a longer journey than to the nearest village, *hât*, or market. The extent to which the people of Bengal emigrate of their own accord to Assam, to other tea districts, and to British colonies is at the rate of about 30,000 annually, and only about 20 per cent. of these go from the thickly populated provinces of Behar and Bengal proper. This figure is quite inappreciable in its relation to the total population.

In Orissa in 1866, and in Bengal in 1874, people wandered from their homes to works and relief centres, and to different parts of the country where they had friends or relations able to help them; but no general movement of the people in any particular direction took place in either year, and no record is available of the number who died or never returned. From the experience of the Orissa famine of 1866, or the Bengal famine of 1877, it was clearly evident that, as a rule, the people would rather die near their homes than emigrate, even if State aid be offered. There is a great and national dread of the sea and of the unknown among all Hindus, which, backed up by caste prejudices, seems to be far stronger than the fear of death.

Mr. Marindin, Buxar.—Emigration to the Northern Bengal labour districts and to the colonies has been active upon the poor people of all castes in the Buxar subdivision during the past twelve months, and was undoubtedly induced by the dearness of food.

Mr. Metcalfe.—No system organised has ever been attempted for emigration from Behar, although every encouragement has been given to emigration agents and others to induce people to emigrate to Burma, Assam, and other places where there is a demand for labour. The people are very suspicious of any Government agency for emigration, and besides have a dread of emigration to an unknown place. They always attribute, too, some sort of sinister motive to Government which they do not attribute to the agents of private companies, who are often residents of that part of the country and are accompanied by persons who are returned emigrants. Two emigration roads have been made from Behar joining the somewhat isolated district of Durbhunga with Purneah and Julpigoree; but the real link wanted to encourage emigration is easy communications from Doobree to Goalparah and Gowhatti. I have frequently met gangs of labourers returning from Doobree, who have worked their way so far, but were obliged to return for want of funds. I am unable to say how many people emigrated beyond the sea, but the number must have been comparatively few. Many hundreds of persons permanently left their villages and settled at Purneah, taking with them all the members of their families, together with their cattle and goods. Having left that part of the country, I am unable to say how many of the people have since returned, or whether their hopes were realised.

* Note.—Coolies registered for Monghyr.

Year.	Under B.C. Act VII. of 1873.	Under India Act VII. of 1871.
1875–76 - -	1,407	185
1876–77 - -	1,822	234
1877–78 - -	2,393	115
Coolies registered for Sonthal Pergunnahs.		
1875–76† - -	78	—
1876–77 - -	625	—
1877–78 - -	1,856	—

† These are for Sudder subdivision only.

SECRETARIAT LIBRARY

CENTRAL PROVINCES.

Mr. Nicholls.—It must be borne in mind that several of our districts are so large that there may be a great deal of migration from one part of a district to another, which hardly amounts to emigration. In this way many of the people of the Chandarpur and Phuljhar zemindaris and of the Raigarh and Sarangarh feudatory estates of Sambalpur, went into the Khalsa, or into the southern and eastern zemindaris and states. In the same way it is believed that many persons from the Seorinarain and Hazur tahsils of Bilaspur, and of Simga Tahsil and Lowm, went into the Mungeli Tahsil of Bilaspur, and into the Dhamtari Tahsil of Raipur, and into the surrounding zemindaris and feudatory states, without leaving Chhattisgarh proper. It is impossible to say how many or what proportion of them came back to their former villages with the return of prosperity. From the Wainganga rice fields many thousands of people emigrated to Berar. But for some years previously emigration to Berar had been going on steadily from the Nagpur Province. I believe that this emigration began with the demand for unskilled labour in Berar, on the railway works, in a country then sparsely populated, but with a vast quantity of good land lying uncultivated. This was followed by an enormously enhanced demand for cotton. The high prices obtained during the American war for Berar cotton gave the cultivators the necessary capital for greatly extending their cultivation by hired labour paid at high rates. Higher rates for the agricultural labour of weaker bodied and inexperienced hands could be given in Berar than could be afforded in the Central Provinces for strong men, accustomed from childhood to such tasks. This happened at a time when the cost of living began to rise rapidly in the Central Provinces, and told heavily on the town population, and those who were not paid in grain. Moreover, the cheaper fabrics of Manchester now began to successfully compete with the home made cloth, and brought pressure on the spinning and weaving classes. These classes could not compete in our provinces for agriculture employment with the regular agricultural labourers, and so it was fortunate for our provinces, for themselves, and for Berar, that circumstances were favourable for emigration. During 1868 and 1869 the flow of people westward under the pressure of famine was very greatly enhanced, but I cannot give statistics for that year.

BOMBAY.

Mr. Norman, Poona.—Government never attempted to organise emigration during the last famine. An offer was made to transport people to the waste lands in the Central Provinces, and no persons could be persuaded to avail themselves of the offer. Voluntary emigration went on to a large extent. Probably, in the worst talukas, a fourth of the whole population left their houses with their wives, families, and cattle for other parts of the country in search of food. Many perished; but the majority returned, having lost all their cattle. None are known to have gone beyond the sea. They wandered into the Nizam's territory, to Central India, and Khandesh. Many went down to Bombay, and a large number betook themselves to the villages on the ghauts, where there was no famine, and where they hoped to find grazing for their cattle. It is impossible to say how many have died. This will not be known until the next census.

Mr. Spry, Kaladgi.—No attempt to promote emigration has ever been made in this district. Emigration could only be organised or encouraged when the resources of the country are not sufficient to provide for the wants of the population, and there appears to be a tendency amongst some of them to move elsewhere. No emigration has been voluntarily resorted to here, either out of the district or beyond sea. I refer, of course, to ordinary times, and not to those who left the district during the famine. I should imagine that not far from 80,000 must have left the district during the recent famine. During the commencement of the famine, when the pressure first began to be felt, there being insufficient fodder for the cattle, a great many took their cattle off to the ghauts in Canara and elsewhere in hopes of finding food for them. In some instances whole families went, in others only a few members went to tend the cattle. At a later period others emigrated with their families in hopes of getting food or employment for themselves. This emigration took place into all the surrounding districts, the Nizam's territories, the Sholapore, Belgaum, and Dharwar collectorates; in fact, wherever the people imagined they would fall in with cheap food and less famine, there they wandered. As regards the people who went to the ghauts with their cattle, they were grievously disappointed. Their cattle died and they themselves were carried off in numbers by jungle fevers. Those, too, who wandered into other districts did not as a rule better themselves, although some may have. I should imagine that half may not have come back, although some do even now. What the mortality may have been amongst the absent ones it is impossible to say.

Mr. Percival, Sholapur.—Emigration from these poor districts is well understood by the people, who yearly go to distant places in numbers proportioned to the badness of the season. Government has nothing to do with it, and would inevitably do harm if it interfered. A vast number went in the famine year, none beyond sea, but all over the Nizam's dominions, where rain had fallen, many to the Berars and the borders of Kandehsh, where food for cattle was obtainable; they spread out, a small number in each village, and obtained a subsistence by working for the inhabitants. They took their families and cattle, but only the very poor entirely deserted their houses. A great many returned in the rainy season of 1877, and many are still returning. They parted with a large proportion of their cattle either by sale or death.

Mr. Ramsay, Nasik.—The only organised emigration was in the case of the Musulman weavers of Yeola and Malegaon. These people are Momins, and came several generations ago from the north-west. Many of these were assisted with money from private sources to return to Hindustan. It is not known what has become of them. Work was found for most of those in need of it, but still large numbers moved off into Khandesh and the territories of the Nizam in search of some employment, leaving in many cases their families behind. Most of these have returned to their homes. I have no means of estimating the numbers of these people.

Mr. A. Wingate.—It was not till I got well to the east of Tasgaon that I found myself in a famine area. Passing from villages noticeably more crowded, I came to villages noticeably empty. The doors of the houses were carefully built up with stone and mud, or plastered with wattle and dab. This condition of things became more and more marked till I got into Jath, where in decent-sized villages (except where there was well cultivation) one had to hunt about to find a house occupied. In one case, I remember, there was only a Patel and a Mhar, that is, the village officer and his messenger, and they were living, with a couple of bullocks, on a scrap of irrigated land.

Ch. III. Qn. 35.

Bombay.

I was of opinion that, while a noticeable fraction of the Tasgaon population had left their homes, the exodus east of that had been enormous, and upwards of half to two-thirds of the Jath population (60,000) had disappeared. Inquiry told me that the great mass had passed north-eastward to Balaghat, in the Nizam's territory. Every year large bodies of people go to the same quarter to reaping, just as the Irish troop over to England at particular seasons; there was connection kept up, for long afterwards I would meet a stray visitant to his village, who would describe that there were crops in the far country, but that times were very hard.

In Kaladgi I found the people from the south had gone away through the Dharwar district to the ghats.

In June and July large numbers returned, mostly weak and fever-stricken. They gave great trouble, because hardly had village relief been got into some order before a new and worse lot of people appeared. In villages that I knew well and had the village dole list in my pocket book and the people in my memory, I would be dismayed to see a pinched-looking stranger child, following whom I would come upon a miserable family. In several cases I noted down their story. Fever had generally carried off the men; the survivors had struggled back with the hope of the return of rain, and now they had got home they would not move a yard to relief of any kind.

All this migration occurred before mortality had begun, before there was any distress; once hope of a "season" had gone, the whole population was up and divided itself into those who were to go and those who were to stay. Among the latter there was no movement afterwards, except in search of relief. Of the former, very few returned till the rains were near.

This migration relieves the country most distressed and carries the people where grain is more easily procurable. I would not attempt to control it, but I would do two things—(1) for the cattle movement, I would, in anticipation, divide the ghats and jungle into grazing blocks (excluding young plantation), and allot so many head of cattle to each block, and I would from the very first see that the cattle were distributed properly, billeting the herdsmen and their children on the villagers and insisting on their getting accommodation, and, if necessary, providing for their support by an order on the village Bania for so many seers of grain per week. And (2) I would send an officer or two to accompany the great migration of the people wherever it tended, who without interfering would watch, and when they found that the new country could not nourish the new population, they would organize relief measures, and thus prevent disease and death there, and the subsequent return of weakened people to add to the labours of relief in the famine area. I would census the immigrants as far as possible, and having ascertained their numbers and the tracts they come from approximately, as they expressed a wish to return, I would pass them back by published routes.

Madras.

MADRAS.

Sir W. R. Robinson.—The inaccurate use of the term "emigration," as applied to a rather wider form of the wild wandering of masses under our late famine conditions, has caused a good deal of misapprehension as well as confusion as to both facts and hopes. It may be broadly stated that there was no increased "emigration," properly so called, during the famine period in South India, such as needs occupy the notice of the Commission.

Below is shown the movement of population across seas during fourteen months of the rise and height of the famine. As regards emigration properly so called —even including the Straits Settlements and Burmah—the fluctuation was unimportant. As regards the casual labor-field of the Tinnevelly and Madura population in Ceylon, it will be observed that about twice the usual number of persons wandered thus far afield in search of food and work, but it was in the main simple wandering as respects this excess. As a rule, labor is searched up by emissaries from Ceylon, and family advances are made to those proceeding from South India to estates in Ceylon; what labor can be fully employed is thus procured. These measures affected the movement of possibly somewhat more than the ordinary average; but the rest left their women and children in the zemindaris of Madura, Tinnevelly, &c., (where the destruction of life has been very great though less known) and simply wandered in a more or less hopeless state to Ceylon, with the inevitable consequence of much loss of life at home and abroad. The causes of this part of South India's famine wandering are obvious, and the Government and planting community of Ceylon bore the unusual and unsought strain bravely; but the consequences both in the homes that were deserted by the bread-winners and to the wanderers themselves turn, I believe, the balance greatly against this form of temporary escape from local distress. I do not think that the thing should be encouraged in famine times.

Statement showing the Number of Emigrants to Ceylon, &c.

	Number of Emigrants during Fourteen Months ending November 1877.								Average Number during the corresponding Periods of previous Three Years.							
	Ceylon.	Burmah.	Straits Settlements.	Mauritius.	Reunion.	West Indies.	Natal.	Total.	Ceylon.	Burmah.	Straits Settlements.	Mauritius.	Reunion.	West Indies.	Natal.	Total.
Ten months ending 31st July	195,603	3,706	2,506	—	1,560	1,199	—	204,664	87,632	3,648	1,894	791	983	1,132	—	96,080
August	30,087	903	606	339	—	—	—	31,935	11,848	798	328	147	78	177	50	13,426
September	19,315	3,996	196	—	—	—	472	23,979	12,522	5,324	1,599	—	78	55	50	19,158
October	12,233	422	283	365	—	442	498	14,376	12,008	597	208	—	78	55	50	12,996
November	7,451	1,232	531	—	—	—	215	9,429	10,596	1,263	—	—	78	460	50	12,447
Total	264,779	10,259	4,122	704	1,560	1,641	1,185	284,383	134,606	11,630	4,029	938	1,295	1,879	200	154,107

As respects organised emigration, I do not think Government can satisfactorily enter into this field of action during a temporary famine occurrence. In the first place no district in South India needs relief at this time as respects its ordinary population, or will do so for generations; there is therefore present and future loss by expatriation. And this consideration applies specially where famine is actually decimating

the existing laboring classes of the country and checking recuperative power.

Organised emigration of large masses is expensive and difficult under any circumstances, and especially so in comparison with temporary home-administration, while as applied to a famine-stricken, declining and discouraged population is not likely to be successful or beneficial from any point of view. Emigration at the suggestion of authority is apt under the circumstances and in the confusion inseparable from the conditions, to degenerate into coercion, &c., in subordinate hands. Under the (*sic*) condition reluctant expatriation is unlikely to prove a permanent benefit to any country to which the distressed poor may be induced or driven to remove themselves for a time by temporary distress at home. I would put emigration aside as an unlikely expedient for the relief of famine, and not succumb to the temptation to transfer the burden of famine support elsewhere. There is little reason to expect cheerful acceptance.

Mr. Longley.—No special emigration was ever *organised* by Government from this district (Salem) during the famine, either to other parts of India or to foreign countries as a relief measure. Notice was given that favorable rates of labor would be given in Burmah, but none went.

The usual emigration agency was at work for relief coolies for the Mauritius and Bourbon. Between January 1877 and July 1878 two hundred emigrants only were registered.

I am not aware that any persons have left the district during the famine to settle permanently other parts of India.

It is quite impossible to give the number of those who left the district during the famine in search of food and labor; but that very large numbers, especially of the weaver class, did so, before labor for these specialists was provided, is quite certain, but no register of these was kept. They went, as a rule, with the members of their family and did not take their property or cattle, which had been previously sold (except a few cooking utensils), with them.

Mr. McC. Webster.—There is a considerable traffic in labor between this district (Coimbatore) and the Nilgiri Hills and the Wynad, coolies from this district going to works on the coffee and tea plantations. During the last year an unusual number of people left in search of work in those districts, a few were accompanied by their families, several by their wives, but had no other property; many of them obtained labor, many however failed to do so, some died, and others were sent back in an emaciated condition. It is not possible to give particulars of the number of emigrants, how many have returned and how many have died. The trial census taken in March last shows the probable decrease in the population to have been about 18 per cent. Part of this decrease is owing to excessive emigration, but it is not possible to state what portion is due to this cause and what portion to deaths.

Mr. Price.—I am not aware of any such organisation. The only emigration movement attempted by Government was from one district to another. I can form no opinion as to the circumstances under which emigration to other parts of India or foreign countries could be organised or encouraged in times of famine. The people of the interior, three districts of which I know very well, are at all times averse to emigrate. The people did not, during the famine, voluntarily emigrate. It is impossible to say whether any went beyond sea or to other parts of India (out of the presidency). No emigration is recorded as having taken place in this district, nor was any in Cuddapah. If any went the number must have been but small. It is impossible to say how many left their villages temporarily during the famine. In Chingleput the number was very large, amounting to several thousands, and the centre of attraction was Madras. They went both alone—men deserting their wives and children—and they also went in families. They took merely their actual personal property, and if they had cattle left them with others.

Mr. Stokes.—Government have not organised emigration. The Ceylon Government has an emigration agent at Paumben who sent 46,740 laborers to Ceylon last year. Most of these returned. Many whose number cannot be estimated left the poorer parts of the district for Tanjore and other places. It is not known what has become of them. Many of them left their women and children behind. This is said to be particularly the case with laborers who have gone to Penang. None of them took cattle or any property for they had none. Many have already returned from Ceylon, but their number cannot be guessed; nor can the total of persons who have gone to Ceylon be known, as many go by rail to Tuticorin and go across.

Lieut. Henderson.—Yes, in 1877 from Bellary, Cuddapah, and Kurnool Districts to the Buckingham Canal Works, Nellore. The emigration was not a success. On the south of canal 50 miles in length, under my immediate charge, in ordinary years, I could have counted on having about 3,000 coolies at work all the year round; during the famine for months the numbers ranged above 30,000, of which at least 20,000 were volunteers.

MYSORE.

Colonel Sankey.—My conviction is, that emigration on any sufficiently large scale will be found impracticable from any but the littoral districts of the Peninsula; the inhabitants of which, on the other hand, being those best protected from famine, are the less likely to avail themselves of such an opportunity. For encouraging inter-provincial emigration, please see my remarks on developing the Nuggur *Mulnād*, Section VII. of *printed Collection.*

Mr. Ricketts.—No attempt was made by Government to organize emigration, permanent or temporary, to other parts of India or foreign countries as a temporary measure. Such emigration could only be organized or encouraged to places where there was food, but sparse population. Much time, however, would be occupied in making the necessary preliminary arrangements, and even then I consider that there would be great risks of such emigrants not being duly cared for. There is a small floating population that annually emigrate beyond seas. In 1876–77, 120 persons so emigrated, in 1875–76, 316 persons, and in 1877–78, none. Not that people were unwilling to emigrate, for they would have come forward in large numbers in 1876–77 and 1877–78, but because the emigration depôts at once got filled and the agents stopped recruiting. Thus apparently no help can be looked to from emigration beyond sea (or in fact inland) at famine time. The reason being that only a certain number of emigrants are required yearly, and all sent in excess of that number would not only be a burden to the foreign colonies (if indeed they consented to receive them), but the emigrants themselves would, as a rule, be without work.

No permanent emigration to other parts of India has taken place.

Approximately, about 5,000 or 6,000 people left the district temporarily to search for food or employ-

Ch. III. Qn. 35. — Mysore.

ment elsewhere; some went alone and some with their families. They may have taken their valuables if any, with them, but no cattle or other property. They mostly went towards the Mulnad and Her Majesty's territories, and where some at least found employment. About one-third have not returned and half of this one-third are probably dead.

Gollurs, *i.e.*, shepherds, emigrated with their cattle, and many of these people are known to have died.

Ch. III. Qn. 36.

Question 36.—The Control of Aimless or Misdirected Emigration.

If famine-stricken people begin to emigrate to a part where it is known they would not find things better than in the country they left, or if they wander aimlessly from their homes, settling nowhere, should steps be taken to stop this, and how? Would you employ the police under any circumstances to turn them back, or to compel them to go to relief-works or poor-houses? or would you let them learn by their own experience? If they crowd into a town, say the head-quarters of the district or the province, would you do anything to stop them on the way or to prevent their begging and straggling about the town when they get there? Refer to para. 25 in answering this question, and add anything that seems requisite in relation to the points now raised.

Punjab.—Would use police to dissuade people from profitless emigration. Would remove them to relief if they crowded into towns. No legislation required for Punjab as it now is.

North-Western Provinces.—Would stop, or at least discourage, profitless emigration. Would not prevent starving people from the country coming into towns. Opinions differ as to legislation. Some would legislate to enable magistrates to send starving wanderers to poor-houses.

Bengal.—Opinions various. Some do not object to turn back emigrant wanderers by use of the police.

Bombay.—Wanderers should be stopped by the police.

Madras.—Fifteen European and one Native gentlemen have replied.

An almost unanimous opinion is expressed in favour of state intervention to prevent aimless wandering.

Punjab.

PUNJAB.

Mr. Gore Ouseley.—Steps should, it seems to me, be taken to prevent famine-stricken people from emigrating to a part where it is known that they would not find things better than in the country they left, and for preventing such people from wandering aimlessly. Such interference is called for in the interests of the wanderers, and of those who, being themselves pinched by scarcity, would be sufferers by the influx of more mouths to feed. I would employ the police to prevent the onward progress of these people, and to point out to them where relief works and poor-houses were to be found. I would not compel any one to go to a relief work or into a poor-house. If they crowd into a town in such numbers as to create anxiety on account of its sanitary condition, I would eject them and provide a relief work (if such work did not exist in the neighbourhood) for their support. I don't think that any popular discontent would be aroused in the Punjab by this amount of interference with the movements of masses of famine-stricken people. Legislation might be necessary to enable the police to practise even the amount of interference above indicated, if famines on a large scale were to become of frequent recurrence; but in the present state of the rural population in the Punjab, both as regards their comparative immunity from famine and their submission to authority, no legislative measures seem to be required.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—Steps should be taken to stop such emigration, and police might be directed to send in to the magistrates all such emigrants; and magistrates should be empowered, after satisfying themselves that such emigration was intended, to compel them to go to the relief works or poor-houses. Nothing should be done to prevent the distressed among the rural population coming into the towns. It is one of the surest signs that distress is beginning to show itself. But all such persons, if found wandering about without employment or begging, should at once be sent off either to the relief works or to the poor-house.

The great difficulty during the hard times last cold weather was to get those who were suffering from the scarcity to come either to the relief works or to the poor-house, and this difficulty would be only added to if any measures were to be taken to prevent, even if such were possible, those in want either of employment or of food coming to the head-quarters or larger towns.

Mr. Tracy.—Everything should be done to warn them that they were not likely to better themselves, and the disposition to wander should be checked by the timely adoption of measures for relief; but, beyond this, I do not think that it would be advisable to interfere. I would not, under any circumstances, permit the police to turn them back or compel them to go to relief works or poor-houses. The responsibility would be too great. Among a crowd of emigrants there might be many with reasonable chances of bettering themselves by emigration, and it would be practically impossible to discriminate between them and the purposeless wanderers. Other objections are the inability of the police to prevent emigration, if the people are really determined to go, the certainty that the power given them to interfere with travellers would be often exercised unintelligently and not unfrequently abused, and, finally, the illegality in the existing state of the law of the measures indicated in the question. I would not take any direct measure to prevent the famine-stricken from crowding into a town, or from begging when they get there. If they prefer begging to living in a poor-house, or to labour on relief works, I would let them take their chance. It is notorious that the people, as a rule, give food to beggars in preference to subscribing to charitable institutions; and though this form of charity is objectionable, it probably relieves the State of the burden of the support of a large proportion of the famine-

stricken. Referring to para. 25, I think that the police should be empowered to take to the nearest poor-house all persons who appear to be actually starving or unable to move about and take care of themselves. Persons in this state should not be allowed any discretion; they are, in fact, incapable of exercising intelligent volition. The poor-house should invariably be enclosed. This, with a guard at the gate, would ordinarily suffice to detain persons in the above condition. I consider some special legislation for the management of poor-houses highly desirable. If paupers were allowed to come and go as they like, the administration of poor-house relief would be simply impossible. In practice, people who are considered unfit to leave the poor-house are generally detained whether they wish it or not. A short Act to come into force on proclamation by the local government would suffice. It would provide for—1st, the compulsory removal to the nearest poor-house of all persons in such a condition that it is necessary to take charge of them in order to save their lives; 2nd, it should provide for their medical examination immediately after their admission; 3rd, the magistrate should be empowered to detain them until it is certified by the medical officer that they can leave without danger. I do not know of any special objections to legislation on the subject. I believe that the above, or something like it, is the practice in most poor-houses. I cannot call to mind that I have ever had occasion to compel any one to enter a poor-house, but I have very frequently prevented people from leaving it when satisfied that they were unfit to go. It is advisable that the practice should be legalised.

Mr. Daniell.—If famine-stricken people emigrate, it is obvious that the time of distress has passed onward, and famine has set in. The only emigration, properly so called, which I have witnessed occurred in 1876, when an enormous number of persons passed through the Jhánsi division to the land of promise, Malwa. It was computed, by counting over a number of days and weeks, that so many as 500,000 passed down one road through Jhánsi towards the country beyond the Vindhyas in three months. They carried their families and household goods, taking flocks and herds to some extent. They went mostly from Gwalior, some from Agra, Etáwah, and Dholpur. They had means to support themselves, and eventually the greater number returned after the October rains fell.

I apprehend that generally emigration will set in before famine is established. It is a question how far any interference is advisable to arrest emigration at the earlier stages of distress. If the Government undertakes any system of relief, such relief would be in working order before famine sets in, and before the people are famine-stricken. If the relief from extent and area of famine is unable to meet all demands, persons no doubt will try to seek food beyond the borders of the afflicted tract or country. Prevention of emigration can only be upheld when relief is sufficient to prevent people dying from starvation.

Persons wander about in search of food and employment at an early stage of distress. The fact of such wanderings is one of the indications that relief is advisable, if State relief is to be afforded. With relief works and poor-houses in operation, I do not see that we should take measures, beyond inducement, to arrest the flow.

Mr. Quinn. — I think that emigration in time of famine much needs control. It is attended with terrible mortality, and the emigrants are guided by information always imperfect and often utterly false. The district authorities should be empowered to stop bodies of emigrants. Special legislation is hardly needed. Being debarred from emigration, the people would naturally find their way to the poor-houses and relief camps. The tendency to wholesale emigration will decrease as the people learn that the Government will not let them starve.

BENGAL.

BENGAL.

Mr. Kirkwood.—Whenever famine-stricken people begin to emigrate to a district in which it is known they will find things no better than in the country they leave, or, if they wander aimlessly from their homes, every possible measure should be essayed for turning them back. The most simple would appear to be that police officers should be placed on the main roads to escort them to the nearest relief officer, who would inquire into their cases and put them on that sort of relief, nearest to their homes, which may be most suitable for them. If they find their way into large towns, and beg and wander about the town, they should be put into poor-houses until arrangements can be made for escorting them back to the relief officer of the tract in which they dwell, there to be put on the relief most suitable for them.

BOMBAY.

BOMBAY.

Mr. Hewlett.—I certainly would not allow famine-stricken people to wander about the country. I would compel them to go to relief works or poor-houses. If left alone, they wander till they die. By crowding into a town they disseminate disease, and I should certainly compel them to go to relief works or poor-houses.

Mr. Norman.—If famine-stricken people begin to wander aimlessly about the country they must be stopped by the police, and, as far as possible, forced to go to relief works. Unless this be done, many will undoubtedly perish from starvation on the roads. If they wander into a large town in great numbers a poor-house should be established at that place, and no begging permitted. The arrangement was successfully carried out at Poona last year, when begging was stopped and beggars sent to the poor-house until they could be drafted on to the works. In large towns a committee should be organised, subscriptions collected, as recommended before, for the support of the local poor, the expenditure being carried out under the orders of the local authorities.

Mr. Spry.—Directly there are signs of wandering aimlessly, or of emigrating to places where things are in no better condition than they are in the people's own districts, very much may be done through the village officers, who can be kept informed by the district ones as to where people can go advantageously or where they can find employment or works. It is ignorance of this, and listening to ill-founded rumours, which causes so much wandering. The great majority of these people only require guiding and information, and if that is given widely through all district and village officers, including police, the wanderers will be reduced to persistent and recusant beggars, who can well be allowed to learn from experience.

All wanderers into towns can and should be led off to works or to relief houses adjacent, where relief would be offered to them; but certainly they should not be permitted to wander and struggle about towns,

Ch. III. Qn. 36.

Bombay.

and thus prove a nuisance to the community. They should be stopped at the gates or other entrances. When they find that they are so prevented they will very soon resort to the proper quarter for relief. It is the chance of picking up indiscriminate charity which leads to demoralisation.

Mr. Gibbs.—With regard to relief measures, the main improvement I wish to suggest is the legislature giving compulsory powers to restrain wanderers and to enforce relief. We need this at the present moment in Bombay to enable us to deport people who have come from Kattiawar attracted here by promiscuous charity, although the chiefs in Kattiawar have started works to employ them. But I refer chiefly to the state of the Deccan, where there are traditional habits of migration. These are to be found chiefly among agricultural labourers of various castes, who have no tie to the land; also some migratory tribes like gipsies. I want an Act which will enable any magistrate to send people found wandering about with no means of subsistence to a relief centre, and, having restored their strength there, to send them on to a relief work and keep them there. This would be quite possible; and if we had had that power during the late famine we should have had much less mortality, as it was chiefly these people who died.

Madras.

MADRAS.

Sir W. R. Robinson.—When famine-stricken people wander, it is because they are unable to get food or work at home or near their homes. There is nothing wanton or wicked in it, and it is the first and only resort of the village starvelings without a poor law provision. The occurrence of wandering further is probably evidence of neglect and maladministration where the wanderers come from. The way to stop wandering—that first object of famine administration—is to rectify and remove these causes; and where the thing has taken place on a large scale and it is known to be hopeless, the proper measures to be taken are to collect and comfort the wretchedness which it represents, and return the sufferers so far as may be to their homes and districts—to well-defined and pre-arranged means of relief. The proper way to effect this is by establishing frequent places of relief and collection on the routes of wandering, and in the towns to which the starving gravitate, and thence to arrange their early relegation to suitable relief elsewhere. The action taken in the town of Madras in this respect affords an excellent model of what should prevail throughout.

Every town must, of course, keep up the means—generally temporary camps with hospitals attached—of collecting, relieving, and relegating to their homes and districts—for relief or work—the famine-stricken wanderers within their limits. The rest is mere police and municipal arrangement and better be left to that adjustment; of course begging has to be stopped and its necessity removed.

Mr. Longley.—Most assuredly steps should be taken to prevent persons wandering away aimlessly, as no doubt many did during the recent distress, especially to Coimbatore, where matters were very little better than in Salem; and for this purpose I would place a cordon of patrols (police) on the frontiers of the district to turn such aimless wanderers back to organised relief works or to camps, according to the circumstances of the case.

I would have a cordon of patrols (either police or special patrols) round the head-quarters and the principal towns to prevent distressees crowding into them. This course has been adopted with success at the head-quarters (Salem), and the town throughout the famine has been kept fairly clear of destitute wanderers. I am strongly of opinion that (*vide* reply to Question 25) *all* wandering emaciates should be *compelled* (when life appears to be endangered by continued wandering without sufficient food) to go to a relief-camp.

Mr. Price.—Experience would certainly be the best means of teaching the people sense, but this would not only involve the death of very many emigrants but would also cause another evil, viz., the pressing upon the district into which immigration took place a large number of people in addition to those already to be cared for. I would, therefore, in the district from which the emigration occurred give notice, as far as possible, that no work or relief would be, in the other districts, given to strangers. I would, as a temporary attraction, provide works not far removed from the people's homes, and open poor-houses along the main lines of exit. I would then place police on the confines of the district and at any large centres, turn the people back telling them where to get work, and sending in by force to the poor-houses such as were in a badly emaciated or sickly condition; in the neighbouring districts I would employ the police, both ordinary and village, and turn back all wanderers. I would give no work to strangers, and where relief had, to save life, to be given, I would administer it under such circumstances as would make it as unpleasant as possible. I would forcibly deport all wanderers to their own districts and make such a step legal by passing an Act empowering the local government to direct such measures to be carried out. Where paupers crowd into a town, I would stop them by means of the police, and force such as found their way in to go into poor-houses to be placed all around the town, they being thence relegated to their proper taluks. I have nothing to add to what I have said in paragraph 25.

Mr. J. G. Horsfall.—Mr. Sewell remarks: "To let people learn by their own experience means death to a large number of them; and I would certainly use compulsion in such cases not only in compassion to them but in justice to the villages amongst which they would wander. These wandering beggars are an intolerable pest. I would not forcibly turn them back, but would compel them to go to the relief works."

Mysore.

MYSORE.

Mr. Ricketts.—Steps should be taken to stop this aimless wandering. Rest-houses or roadside kitchens should be established, and the wanderers stopped at them and relegated to relief works, and, if possible, in the vicinity of their homes. These wanderers should not be left to learn by their own experience, but turned back by the police. I would use every endeavour to prevent wanderers straggling and begging about the town, and if I knew that there was a complete system of relieving these people in the interior I would adopt such measures as would effectually keep them out.

QUESTION 37.—REMISSION AND SUSPENSION OF THE LAND REVENUE DEMAND.

Is it a recognised feature of the revenue administration in your district to give relief by the remission or suspension of the demand for land revenue when the crops fail? If there are any established rules, quote them. Is the land revenue assessment based on the principle that profits of good years should cover losses in bad years? Is it assumed that a sufficient margin of profit is left to the landowners to admit of the regular payment of the revenue under all vicissitudes of season, or only in the ordinary fluctuations that occur, excluding seasons of extreme drought? What is the practical state of the case? How far is it found to be possible to collect the land revenue in a year when the crops have totally failed, without pressing unduly on the landowners? What amount of failure of crops is held to justify what amount of leniency in collection? Where the occupier of land pays rent to a landlord, how is the payment of such rent affected by failure of crops, and to what extent does the remission or suspension of land revenue lead to corresponding treatment of rent? What are the arguments in favour of giving relief in the form of remission or suspension respectively? To what extent has it been customary in actual practice in your district or province to remit or to suspend in such cases? Up to what limits do you consider that it is practicable to recover in future years the postponed demand of bad years, or does suspension practically mean remission in all but a few cases?

Punjab.—Remission allowed in case of total failure. Speediest and fullest mode of giving relief. If revenue is remitted to landlords they should remit to tenants.

North-Western Provinces.—Suspension or remission has to be made in case of extensive failure of crops. Both took place in 1877–8. The Board of Revenue is strongly in favour of remission as preferable to relief works, and thinks suspension should be turned into remission on the failure of two consecutive harvests.

Bengal.—Remissions are not contemplated in the terms of the permanent settlement, and it is so light that there is no need of them. Revenue may be suspended on condition that zemindars suspend collection of their rents.

Bombay.—Remissions are not contemplated as part of the revenue system, though they have to be made to some extent in bad years. The general opinion prefers suspension to remission. Suspension not remission is now practised.

Madras.—Remission of the demand is a recognised feature of the revenue administration in case of total failure.

PUNJAB.

Mr. Gore Ouseley.—The principle on which the land revenue is assessed is to fix a moderate demand for a long course of years. The Government agrees to relinquish the excess in a good year, and it is fair to expect that the deficiency of a bad year should be made good from the accumulated surplus of past or the anticipated surplus of coming years. But the expectation can be realised only under the ordinary fluctuations of season, and not when an extreme drought prevails for more than one harvest in succession. Where there has been a total failure of the crop, remission is at once allowed. Where the out-turn has been equal to only half the yield of an ordinary season, the Government demand is suspended, and would be recovered in the course of a year or 18 months if the succeeding harvests were good. Smaller failures of harvests would be met by smaller concessions. It must be remembered that, when drought and consequent scarcity of grain occur in one tract of country, they cause higher prices for grain to exist in the neighbouring tracts not similarly afflicted; and that the revenue, being paid in cash, is more easily paid in the tracts not suffering from drought than it would be in seasons of plenty.

Where the occupier of land pays rent to a landlord he is entitled to a suspension or remission of his rent to the amount of the revenue assessed on his land whenever that revenue is suspended or remitted by Government.

The arguments in favour of giving relief in the form of remission of revenue are, that it is the speediest and fullest mode for giving relief. It saves the owner and cultivator from borrowing money to pay the Government demand, and it encourages them to hold on to the land.

It may be as well to state, in illustration of the extent to which remissions and suspensions are granted in seasons of distress, that over 60,000 rupees of revenue were remitted in six districts in 1877–78, and that in 1878–79 over three lakhs of rupees of revenue were suspended from collection in the four districts which were chiefly affected by the failure of their crops. Part of this sum will probably have eventually to be remitted. But this will depend on the nature of the seasons and of the harvests for the next few years.

NORTH-WESTERN PROVINCES.

Mr. A. Colvin.—This is done. It is impossible to collect revenue in a season when crops have *totally* failed. The autumn crops totally failed in this district over nearly its whole area in 1877. Half the revenue was collected without great difficulty; four-fifths of the balance being deferred till the spring collections of 1878, and the balance till the autumn crop of 1878. There is no fixed rule as to amount of failure in crops. It must depend as much on the means of the landlord as on the crop.

Mr. Sandys.—Suspension or remission of the land-revenue demand is granted in case of extensive failure of the crops.

The established rules are laid down in Board of Revenue, North-Western Provinces, circular No. $\frac{4}{11.\ 710}$, dated 28th June 1876. Profits of good years are supposed to cover losses in bad years, but would not be sufficient if the drought were so extreme that there was complete failure of both the autumn and spring harvests.

The rent-roll prepared at the time of the settlement in 1864-65 was Rs. 20,96,764 and the revenue demand was Rs. 9,28,624, and in 1872-73* the

* These are the only years for which the figures are obtainable without some delay.

rent-roll was Rs. 23,37,274, the revenue demand Rs. 10,29,770. As it is notorious that the rent-roll does not give the full value, there is a large margin of profit to admit of the regular payment under all ordinary vicissitudes of season. As there is no record of the entire failure of the crops in both harvests, it is difficult to say what amount of the land revenue could under such circumstances be realised. There are very few wealthy landlords in this district, and, if the crops of both harvests totally failed, a suspension of the total demand due from them would be desirable. Collections could not be made from such landlords without undue pressure, and such pressure would result in the State having to support the greater number, if not the whole, of their tenants. As regards the majority of the zemindars of this district, they are as a rule heavily in debt, and in their case remission of revenue should accompany a total failure of the crops in both harvests, and suspension of demand a failure of one-half the crops in both harvests.

The failure of half the crops in both harvests over more than half the total revenue-paying area would generally justify leniency in collection.

The proportion of his rent paid at each harvest by the occupier of the lands depends, as a rule, on the proportion that has failed of his crop. Rents are usually paid in money, and not in kind, and in a lump sum distributed over each harvest in the same proportion as the Government revenue, but only paid in that proportion if the crops are fairly good ones.

Suspension or remission of land revenue had to be made in the following years since the last settlement:—

In 1877-78—Suspension Rs. 250.—To be recovered in November, and December, 1878.

In 1877-78—Remission Rs. 3,394.

If the estate is lightly assessed, and the total failure of the crops of not more than one harvest has occurred, suspension would be sufficient. If the estate is fully or heavily assessed, and is not free of incumbrances, and the crops in both harvests have totally failed, remission should be made. In the former case the proprietors in this district would ordinarily be able to repay the amount suspended, with the instalments of revenue due from them, at the next harvest or the one following; and in the latter case, though few of the estates are fully assessed, yet a large number are heavily mortgaged. Unless the revenue were remitted, the estate would soon be brought under the hammer by order of either the Civil or Revenue Court.

Since the Mutiny, excluding 1877-78, the following sums have been either remitted or suspended on account of drought:—

In 1860-61—Remission - - Rs. 9,859.
Suspension - Rs. 8,201.

Recovered in March 1862.

If balances cannot be collected by instalments within three years, they should be remitted.

Mr. Lumsden, Rae Bareli.—The principle and rules as to remission or suspension of land revenue recognised in and applicable to the province are of course applicable to this division, and it would seem quite superfluous for me to give them in detail. There are not, I believe, any hard and fast rules governing such matters; it is a recognised principle, however, that extraordinary and exceptional losses from failure of crops, whether caused by drought, hail, or inundation, call for exceptional measures of relief in the way of suspension or remission of the land revenue, and the practice has been, I believe, to deal with each case on its own merits.

No doubt the principle of our assessments is that the profits of good years should cover losses in bad years, for in the old form of settlement engagements special mention was made of the fact that any loss from drought, hail, &c. would not be held to entitle the zemindars to any consideration; this, however, has been omitted from the forms of engagements now prescribed for adoption in the North-Western Provinces. I am not, however, aware that its omission is attributable to any departure from the rule that our assessments are based on the principle that the profits in good years should cover losses in bad; perhaps the omission was rather attributable to the fact that, notwithstanding this principle, it was the practice in exceptional cases to grant remissions or suspensions, and it was, therefore, absurd to retain such a special stipulation in our settlement engagements.

Notwithstanding the principle that profits in good years should cover all losses in bad years, there can be no doubt that owing to the absence of forethought, and the spendthrift habits of the majority of the agricultural classes and the hand-to-mouth manner in which they live, laying aside nothing for a rainy day, the profits left in good years are not sufficient to meet the losses incurred in seasons of extraordinary drought, and that, except in the case of a small minority, the payment of the Government demand in such years cannot be met without incurring debt. In other words, in practice, the margin of profit appears to be sufficient only to cover losses attributable to the ordinary fluctuations that occur, and not such losses as result from seasons of extreme and extraordinary drought.

No doubt, if a larger sum were taken from the landholders in good seasons when they had it to pay and a lesser sum in bad or indifferent seasons, the aggregate realisations in a series of years, after making allowance for remission and suspension, would even exceed the sum now collected; and as the money would be taken when the people had it to pay, I have no doubt the higher amount even would be realised with less risk than there now is of recourse being had to the mahájan to meet the Government demand. I do not, however, consider that a system under which the Government demand for the year would depend on the nature of the season—seasons being classified according to actual results, to be ascertained and determined annually—would work well. Such a system would, in my opinion, be altogether a retrograde step: it would introduce an element of uncertainty which could not but have the effect of checking the investment of capital and the expenditure of labour in effecting improvements, and the annual inquiry which would be necessary under such a system would open a door to much fraud and prove an incentive to dishonesty; our present establishments would be unable to undertake the work efficiently; and the zemindars would have to incur expenses which it is unnecessary to allude to, and which while so far reducing their profits would in no way benefit Government.

In fact, all the benefits resulting from a fixation of the Government demand for a certain period would be sacrificed.

Instead of adopting any such system, I would suggest for consideration whether it would not be better, in making our assessments for a fixed term, to recognise the fact that the margin of profit left to the landholders under existing rules of assessment is not sufficient to admit of the regular payment of the revenue under all vicissitudes of season, but that at the same time it is more than sufficient for this purpose with reference to all the ordinary fluctuations of season; and accordingly to fix the State's demand at a higher percentage of the assets than is now taken, declaring at the same time that in seasons of extraordinary drought suitable remissions would be granted.

Under such a system the necessity of annual or periodical inquiries would be avoided, and all the disadvantages inseparable from any system under which the Government demand is liable to alteration every year, even although the limit of such fluctuations be fixed, would be got rid of. The system would, I am convinced, be more popular with the landholders, and Government would at the same time be in a position, without sacrificing its revenue, to make liberal remissions in seasons of extreme and extraordinary drought—a measure which, if it could be carried out without sacrificing revenue, would

greatly reduce the difficulties now felt in carrying out other measures of relief in times of famine.

It is not possible to collect the land revenue in a year when the crops have totally failed without pressing unduly on the landowners, except, indeed, in the case of the few who have accumulated capital, invested or uninvested, from which they can meet the demand.

As far as I am aware, there is no fixed rule that a certain amount of failure of crops justifies a certain degree of leniency.

My own experience is to the effect that except in the case of cultivators who abscond or die without leaving any property, or are absolutely reduced to pauperism, landowners in the case of all others eventually recoup themselves for what they have suspended in seasons of extraordinary drought.

In my opinion, any suspension or remission of the Government demand should, as a matter of course, involve a proportionate suspension or remission by the landholder of the tenant's rent. There is, however, this difficulty in connection with this matter, that some individual cultivators are often in a position to pay up in full, while the circumstances of others call for even greater concessions than the amount of land revenue suspended or remitted to the zemindar would entitle them. What should be insisted on is, that the zemindar in the aggregate grants suspension or remissions of rent proportionate to the remission or suspension of land revenue allowed him by Government.

I am certainly of opinion that more real assistance and relief is afforded by moderate remissions than by suspensions of heavier amount. The argument in favour of suspension, however, is of course that the Government demand represents the State's fair share of the annual assets over a series of years, bad and good taken together; and that in case of failure in any one year the zemindar should pay from the excess profits of good years, and that the most he can expect is some grace to enable him to meet the demand. Another argument in favour of suspensions rather than remissions is that in famine times, when such concessions are called for, the financial resources of Government are always taxed to the utmost, and any serious actual loss of revenue such as remissions on any considerable scale involve can ill be borne by the State. I do not consider that suspension practically means remission in all but a few cases.

A great deal, however, will depend on the nature of the assessment and the circumstances of the villages. It is impossible to give a general answer to a question of this sort. Our assessments do not all fall with equal incidence, nor do they secure for Government a uniformly equal share in the zemindar's gross assets. Every division has its highly assessed district, every district its highly assessed pargana. The converse of this is also true. Moreover there are districts, or at least parganas or tahsili subdivisions, in which the proprietary body are very numerous, whose landed property has been minutely subdivided, and almost the whole of the land is the home-farm of the proprietary body, cultivated by themselves with the assistance of hired labour. On these and other matters will it depend to what extent suspension can be realised in future years. Where the assessment is light, the realisation of the postponed demand of bad years will be comparatively easy, and a larger proportion of the demand may be suspended without jeopardising its ultimate recovery than in a highly assessed tract. In a pargana, the estates of which are generally held by a numerous body of small proprietors who themselves cultivate the land, it will be found extremely difficult to realise the postponed demand of bad years, even if the assessment is comparatively light and the amount suspended moderate.

Under ordinary circumstances, and if a general answer must be given, I should say that, with our present assessments, one-third of the demand, if suspended, could be realised without much hardship in from two to four years, provided these were years of average prosperity.

Mr. Neale, Hamirpur.—The working of the present system of revenue administration in a time of drought may be illustrated by the following facts. Last autumn, at the time of sowing the spring harvest, I visited the most distressed portions of this district. The condition of the cultivators and small proprietors, who habitually live from hand to mouth, was as follows:—their autumn seed had perished; they had no seed for the ensuing harvest; they had no present crop wherewith to meet the instalment of revenue then due; they had no store of food for subsistence till the next harvest; they had no fodder for their cattle; and many of their cattle had positively died; finally, nearly all of them were in debt already. I represented these facts through the collector to the Commissioner, suggesting large advances of seed. I also, from my own observation, made an estimate of the fair amount of revenue which could be collected for that harvest, taking into account the private resources of some of the wealthier landowners. In one pargana I put this amount at 2½ annas in every rupee, and in another pargana at 4 annas. But the orders of the Supreme Government were strict. Advances for seed were to be limited only to those who could get no advances from any other source, and every pie of the revenue was to be collected if possible. These orders, were, of course, obeyed. About 10 to 12 annas in the rupee were collected for the autumn instalment. The balance, all but about 5 per cent., was collected at the spring harvest, which, however, proved a comparative failure, being probably only about a three-fourths crop. In the meantime, the people lived upon what the baniyas would advance them, eking out their resources by berries, grasses, and by the unripe ears of the spring crops as soon as even these appeared above ground. They did not complain, they never expected the Government demand to be remitted; but they did expect it to be partially suspended till better times. The amount of suffering and of debt and bondage which this method of administration has entailed it would be difficult to estimate. But our system accepts it all as a matter of course, and, in fact, cares for none of these things. Yet, on the other hand, once a certain point is reached, it is lavish of relief, which is apt to run into license and to get beyond legitimate control.

I would suggest a change of system which, if found practicable, might, I think, to a certain extent forearm both people and Government against similar calamities, and unite both for mutual self-preservation.

The fault at present seems to be that Government will not aid the cultivators itself, shrinking from such an undertaking for financial reasons: nor will it permit the monied classes, the bankers, money-lenders, and others to step in as landlords, a change which it equally dreads for political reasons. The result is that, broadly speaking, nearly the whole agricultural class is in a condition of distress and decay. I would propose a system of advances for seed by Government on the twofold security of the crop to be sown and of the proprietary title in the estate or recognised division of the estate (thoke, patti, &c.), comprising the land in respect of which the advance was made; the interest charged to be at the rate ruling for ordinary transactions in this country, viz., 12 per cent. when Government should be the creditor. But when Government guaranteed loans on the above security from other sources, the interest to be 13 per cent., the additional 1 per cent. to cover Government expenses. I would also propose suspensions of revenue on a regulated scale proportioned to the vicissitudes of the harvest.

A primary objection will be raised that this proposal is an interference with the landlord's rights. I do not think so. The *zamindar* always was, and is now, merely a middleman who is allowed the handsome proportion of half profits; and the existing modifications of our settlement principles have been made in the hope that he would improve the condition of land and of his tenantry. In both of these respects he has failed. It is time, therefore, for the supreme landlord to interpose.

The following is a brief sketch of the method by which the above proposals might be worked.

(*a.*) *The amount of these advances*; not to exceed $\frac{1}{8}$th or $\frac{1}{10}$th of the average gross produce of the estate or division of the estate concerned. Applications to be made through the headmen of the village (lumberdars, &c.) on behalf of the cultivators, when the former refused to forward an application, the cultivator himself to apply, and the case to be dealt with on its merits.

(*b.*) *Tenants to be aided*; should be persons holding at not less than a three years' lease. The present law appears to provide against such leaseholders becoming, *ipso facto*, hereditary occupants. Care should be taken to assure zamindars that in granting such leases they are not curtailing their own rights, which would remain unaffected on the expiry of the lease.

(*c.*) *Recovery of advances*—this to be considered both principal and interest, as the first charge on the estate, and to be ordinarily payable within one year. The land revenue to be the second charge.

(*d.*) *Recovery of land revenue*—to be liable in bad seasons to a rateable suspension, with this *proviso*, that within a period of five years from the date of the first suspension all suspensions should be paid up. This is on the supposition that there are not likely to be ten bad harvests running. A limit to indulgencies is necessary at some point.

(*e.*) *Scale of suspensions of land revenue*—might be graduated to the out-turn of the harvest, an equal suspension of rent accompanying it. Calculating a full harvest at 16 annas, say, when the harvest fell to 12 annas, then a suspension of $\frac{1}{10}$th; when to 8 annas, a suspension of $\frac{1}{8}$th of the land revenue; and so on, till the point of absolute drought be reached, when express measures would be required.

(*f.*) *In seasons of drought or famine* the same process should be extended, and at the same time modified. Advances should be made for subsistence as well as for seed, but at half rates, on the express understanding that the zamindars should maintain their cultivators and the village population generally to the utmost of their means within their respective villages, repaying the loans advanced them for this purpose as an extended date.

(*g.*) *Union of villages.*—I would recommend for the purpose of carrying out the above plan, that villages should be grouped in twos or threes, not to share responsibility, but so that the more active or intelligent communities might advise and stimulate the more backward; and also to enable information as to the real state of affairs in each to be more accessible.

A multitude of objections and difficulties naturally presents itself against this proposal—the present indebtedness of the people; their habitually suspicious attitude towards Government, the opposition of the richer zamindars, and a host of administrative obstacles into the bargain. But by trying at first with small beginnings, these might, I believe, be in time surmounted. The main difficulty would be with that class of landholders whom it is generally thought most desirable to encourage and maintain, viz., the small coparcenary cultivating zamindars. But with these, as with the rest of the cultivating community, when they understood that they could get advances at fair rates, and that allowance would be made for bad seasons, they would, it is to be hoped, prove manageable. A large portion of the other classes of zamindars would themselves require no help. They would not refuse Government aid for their tenants on the condition of enjoying indulgencies themselves in bad years.

The effect of this system would be not so much to employ Government funds, though under the circumstances, this would not prove, I think, unremunerative, but to employ local capital at fair rates, and to protect the needy cultivators from the present usurious practices of the baniyas.

The plan is already familiar in the procedure of the Opium Department; and the Lucknow branch, at all events, of the Bank of Bengal, advances yearly large sums to the talukdars of Oudh. In both cases the results have been satisfactory. All district officers must have met with instances where fair-dealing and intelligent capitalists having bought estates are now managing them with conspicuous success. They get more rent, they show better cultivation, and they pay a higher revenue than their neighbours, simply because they foster and at the same time energize their tenants. Why should not Government, through its local officers, stand, in some measure, in the place of such capitalists?

The interest earned would cover the expenses incurred. In each village a special writer or registrar should be placed, distinct from the patwári, whose time is already occupied overmuch. This person should keep the accounts; also a list of ploughs, cattle, and the hired labouring staff of the village, and a yearly return or estimate of the produce of the estate. Such details, combined with the loan accounts, would put Government in possession of accurate information as to the real condition of the population, a subject on which at present nothing, or next to nothing, is known. Of course, an increase to the collector's district staff would also be necessary; for that also sufficient funds would be forthcoming. At present, schemes for land improvement and for ordinary advances (takávi) fall flat. The cultivators and the landlords are suspicious, and there are long previous palavers with forms, securities, &c., to be filled in, which disgust and alarm the proposed recipient. This should be avoided. The simple fact of the advance should be understood to hypothecate the crop, and ultimately the landowner's title. In time, supposing the system to work well, the cultivator or farmer would learn to take advances for improvements, which he should have on the same easy terms as at present. In fact, the district authorities would be in a position in many cases to exercise judicious pressure and induce him to accept such offers. Again, the inter-union of villages might ultimately lead to the formation of some sort of humble tribunal which could dispose of local cases connected with petty loans for land purposes and similar small revenue cases—a revival, in fact, of village *panchayets*. Express legislation would be required to set such a system as the above in motion, and not only that, but a complete change of attitude on the part of the Government towards the whole question. The idea that by long settlements and relaxed terms the mass of the agriculturists is benefited, and that regular payments to Government are thus made easy, has proved delusive. The persons benefited are the big land speculators and the little money-lenders. If Government wishes to save the cultivating community it must descend to their level and work with them, give them confidence, and to a certain extent share their risks. That it would do so at a loss I do not believe, because the interest and extortion to which the cultivator now submits is probably at least four times what Government would demand from him, and still he pays it. Why should he not pay less, but pay to Government, and benefit himself and the State by the difference?

In a time of famine this habit of co-operation with Government would be found of the greatest service. It would be wise in such seasons to remit, absolutely, a part on the whole of the instalment of revenue—to lend, of course, on very low terms, and, if need be, partly to give funds for the maintenance of each village. But this advantage would be gained,—that these funds would be administered through the agency of the zamindars, who would be interested in economizing, instead of distributed by contractors and strangers. A *residuum* of the surplus population in each village, the mere hangers on, and the most destitute would, of course, congregate unavoidably at relief works, but their numbers ought to thus become far less than at present. And experience under the proposed system, as it accumulated, together with the information gathered for each village, as above described, ought to enable Government to check each

community's proceedings, and to insist upon the zamindars maintaining at home a fair proportion of their people, according to their means and legitimate borrowing power.

Mr. Cadell.—I am looked upon as a monomaniac by the Board on account of the persistency with which, as each Bánda pargana is assessed, I state my views that our revenue administration has ruined the proprietary classes all over the country by the rigidity of our system of revenue collection even more than by the severity of our assessments. But the more I see and hear, not only of Bánda, but of the country generally, the more I am convinced that, where irrigation is not general, or where the people are not peculiarly thrifty, as, for example, in the tract 20 miles to the south of Roorkee, which was formerly wholly unirrigated, even half-asset assessments, collected as our assessments are, with little or no regard to seasons, will break down the average proprietary community.

In 1876, I implored the Board to allow the experiment to be tried in one pargana (Maudha of Hamírpur) in the following terms :—

"It would be unsafe to assume that in future our revenue administration will be more considerate than it has been in the past; and it is, I think, necessary that some plan should be devised which may give the people a chance of fair treatment, irrespective of the views of the officers who may happen to administer the affairs of the district. The difficulty is to fix a standard by which prosperity shall be judged, and until recently this difficulty might have been held to render any proposal such as I have to make impracticable. But with a minute and fairly accurate classification of soils, and with village papers compiled with a degree of care unknown formerly in this part of the country, the rent-roll may fairly be accepted as correct, and may guide the proceedings of the collector. Cultivation by proprietors might be rated as that of ex-proprietary tenants, and this would allow of an additional margin in the villages in which it would be most likely to be required."

"And the system which I would follow is this :—I would allow the proprietors the full enjoyment of a clear profit to the extent of 50 per cent. of the Government demand ; any surplus I would divide between Government and the proprietor, the additional sum collected by Government to be credited to the village, and to be utilized in case during settlement reductions are required.

"In this way, supposing the demand of a village to be fixed at Rs. 1,000, the 10 per cent. cess, patwáris' and lambardars' fees, and village expenses might bring up the total sum leviable to Rs. 1,250. Whenever the rent-roll exceeded Rs. 1,750, Government would be entitled to share the surplus ; or, for facility of account, it might be arranged that, when the rent-roll exceeded stated sums, Government should collect an extra half anna or anna in the rupee. On this system the increments might be—

Rent-rate.	*Annas in the rupee.*	*Amount.*
Rs. 1,820	½	Rs. 31–4
„ 1,880	1	„ 62–8
„ 2,000	2	„ 123 & so on.

"Such excessive rent-rolls (as Rs. 2,000 to Rs. 2,600) are by no means unusual in Bundelkhand, and not a few villages in Bánda, which are now on the brink of ruin, show within the last 10 years fairly accurate rent-rolls three times the amount of revenue. Under the present system this surplus is spent by the people, and when distress comes, no attention is paid by Government officials, in a great measure, no doubt, because it is so hard to collect arrears when they have once been suspended. If there were a surplus at the credit of the village, there would be less hesitation in granting reductions, and the good years might be made, as they clearly ought to be made, to pay for the end.

"In allowing reductions, a similar system might be followed to that proposed as the method for levying additional revenue. When the rental fell below Rs. 1,400 (when there was no money in the treasury at the credit of the village, or Rs. 1,500 when there were funds to its credit), reductions might be allowed to be made good from the amount at credit or from future collections as the case might be."—*Paras.* 130 *and* 131, *Maudha Rent-Rate Report.*

There are, of course, objections to be urged, some of which I have stated in the report and in the subsequent correspondence, but I do not think that any objections can balance the urgent reason for some change, and that is, that our revenue administration, as hitherto conducted, has ruined more or less fully every district in Bundelkhand within 20 years of our acquiring it. You might think that, if this is the case, there can be no proprietary communities left to maintain. This would have been literally the case had not, some 50 years ago, the collector and settlement officer of the day, Mr. Begbie, sold up every purchaser who was in difficulties, and given back the estates to the old proprietors, and had not Sir William Muir got Mayne to adopt the same policy of restoring the old proprietors in a number of estates confiscated after the Mutiny. Where Mr. Begbie's measures did not prevail, and where Mayne did not restore the land to the old communities, there are hardly any proprietary communities left. This is especially the case in the old pargana of Kalinjar, which I am at present inspecting. Here, too, we have not the insufficient excuse that we cannot successfully administer districts in which the black soils prevail, for they do not form a larger proportion of the area than the alluvial soils of most tracts. The people are industrious, and I know no tract in which so much has been made of naturally poor soil. Population is efficiently distributed in numerous hamlets, cultivation is most careful, embankments are to be found by hundreds in every village, and heavy as our assessments have sometimes been, the majority of the old proprietors have been ruined by the rigidity of our system of collections.

And in the black soil parganas it has been proved that half-asset assessments are not enough. Three or four years of heavy rainfall reduce the cultivated area by one-half or three-fourths. Our revenue system is unflinching. We force the landlords to be equally stern or we take their places, and the populous flourishing village of the census in 1872 is half deserted in 1876, and the people, when wiser counsels begin to prevail temporarily, have to be got back from the Native States and the Central Provinces.

But independently of its absolute necessity in Bundelkhand, an alteration of our revenue system in the way I have proposed in detail, and which has so often been more generally suggested, would furnish all over the country the greatest assistance in years of difficulty. My experience of famine is limited to that of 1868–69 in Muzaffarnagar, in which the distress was so little that I was able to make the necessary suspensions of revenue in three-fourths of the district in a couple of months. But I saw enough of the difficulties of not very flourishing dry villages to be able to estimate the value of suspension of the demand. The zamindar had not to press his people, the day-labouring class got work, and were able to tide over the hard times. But suspensions are not always permitted, and in order to ensure their being allowed, system must be introduced. A few good seasons would give the Government a considerable sum in hand, and the villages, with a fair margin to their credit, would meet a drought ready for it and with one great difficulty removed.

The people made no difficulty with reference to my proposed innovation in Maudha. They saw, I think, that it would be a help on the whole ; but I have never been able to get any final orders on the subject, and I have omitted the stipulation from engagements in other parganas.

I see you are taking up Jhánsi. I have never been able to study the subject in all its details, but I am not convinced that the settlement is free from blame. Rates for the best black soils are more uniform in

Bundelkhand than elsewhere, and those assumed in Jhánsi without any very scientific inquiry are very high. Another point to be considered in a Bundelkhand settlement is the assumed area of cultivation. I could point to village after village in this district in which the assessments have broken down, not because the rates were high or the people indolent or even unlucky, or the seasons bad, but simply because the late officer chanced to come across the village at a time when, very probably after a period of depression, cultivation had been rapidly extended. There are villages in which the area under cultivation amounted in 1842 to 95 per cent. of the assessable area, whereas in 1876 it stood at 50 to 60, and in which I assume as a permanent standard only about 70. Of course I may be wrong, and my assumptions of a fair standard may prove to be more or less erroneous, but the facts which guided the Settlement Officer in 1842 have been proved to be exceptional, and the assessments based upon them to be impracticable.

To make a fair settlement for Bundelkhand you must have fair areas as well as fair rates. The necessity of allowing safe margins of areas does not at first strike a man fresh from the Doab. In Bánda I have been forced to assess on assumed areas largely in excess of the cultivated areas recorded, but greatly less than those of last settlement. In this pargana, in which there is hardly any fallow, I shall probably have to allow a margin in excess of that which I find; but this pargana differs as much from the ordinary black soil in Bundelkhand pargana as it does from the Doab.

I have never been able to complete my answers to the famine questions, and my experience of droughts is so small that I have little on that head to say. I agree entirely with Buck that our great mistake in canal-irrigated tracts was settling on the basis of existing assets, instead of excluding the canal from our calculations, and leaving its revenue administration independent of our assessments. In dry tracts the great want is a more elastic revenue system, and without it, I am convinced that the large reductions of revenue, which are now for the third time within 50 years being given in Bánda, will fail to secure the country from those recurring periods of depression, which, caused sometimes by drought, but more frequently by successive years of excessive rainfall, constantly throw back Bundelkhand, and have now left it on the whole less prosperous than when we took possession of the country.

If I can help you with any local information please let me know, and I will endeavour to make up for my neglect of the famine questions. I have nearly got to the end of my inspection, and when I shall have completed the fiscal history of Bánda, which is more than half done, the most absorbing portion of my work will be at an end.

Mr. Blennerhassett, Rae Bareli.—It is not presumed that landlords can, as a rule, pay revenue in seasons of severe drought. They clearly cannot do so. Landowners are supposed to bear all ordinary fluctuations that occur, and, as a general rule, they can do so, especially if their land is good. The Government settlement, as a rule, is rather hard on bad lands, though less so in this district than in others.

The landlord can give just as much or as little of the Government remission to his tenants as he pleases; they are nearly all tenants-at-will, and even though a Government official records remissions in favour of tenants in the village accountant's books, and with every possible precaution, the landlord can and does, if he chooses to do so, realise the full rent, and no tenant dares to complain.

In Oudh, therefore, there is little hope of Government remission ever reaching the mass of the cultivators, and the arguments in favour of this course are much weakened in consequence.

The remissions and suspensions for the last three years have been as follows:—

	Remitted. Rs. a. p.	Suspended.
1874–75	536 6 6	Nil.
1875–76	505 13 2	Nil.
1876–77	4,052 4 0	Nil.
Rs.	5,094 7 8	

Suspended revenue is almost always suspended merely for a time and subsequently realised, unless it is granted with a view to revision of demand. Remissions, in general, are not liberal enough. Many villages are ruined for years by a single hailstorm; it is, however, useless to give remissions nominally to tenants, but in reality to landlords only; both small landowners and tenants are unable to stand any substantial loss to their crops; they have nothing to fall back on; the only point in their favour is that nature is so prolific that a state of affairs injurious to one crop is sometimes beneficial to another.

The Board of Revenue.—Remission or suspension of the demand for land revenue when the crops fail is provided for by section 23, Act XVIII., 1873, and the rules under it contained in Board's circular $\frac{4}{II.\ 710}$, dated 28th June 1876, (page 25, II. Board's Extant Circulars). But these rules are not suited to any extensive failure of crops, and no attempt has been made to apply them to the tracts where nothing could be grown during the late drought. If a hailstorm or a calamity of any kind affecting a comparatively small area occur remission or suspension may be granted under the rules, but should the crops of a whole district fail nothing is done, and the relief which is given to the few is denied to the many, who may be equally, or even more, in want of it. It appears to the Board that this is an anomaly which should be removed, and that rules for suspension or remission are required, adapted to a failure of crops on the most extensive scale. It should be remembered that in famine seasons the loss to zemindars and cultivators is far greater than that of Government, even supposing the whole of its demand to remain uncollected, and the Board believe that by a judicious policy of not enforcing payment of the land revenue, where the people have not sufficient to pay and to support themselves afterwards, the evil effects of bad seasons may be most effectually and economically counteracted. They cannot consider it wise to extract money from the impoverished agriculturist only to have to spend it again in the shape of relief works, with all the expensive machinery required for their supervision. These, as stated before, they look on with the greatest disfavour, and if remissions were promptly and liberally granted the necessity for opening them in agricultural districts would, the Board believe, be to a very great extent diminished. A reference to the Famine Reports in the hands of the Commission will show to what extent remissions were granted in former famines, *e.g.*, 1863–64, when they were given with great success, and the Board regret more in this way was not done on the present occasion, as probably less expenditure would have been incurred in the end. The question, however, is a difficult one, and it was only natural that collectors who were aware of the financial difficulties of Government should hesitate to make proposals which at first sight would appear to increase them. In principle the land revenue is supposed to be fixed at an amount which leaves a sufficient margin of profit to the landholder to admit of its regular payment under all vicissitudes of seasons, but practically it can only be realised in good years. It is impossible to lay down exactly the amount of failure of crops which should justify leniency in collection. Each case must be decided on its merit, and according to the circumstances of the landholder. There would be no hardships caused by insisting on payment from a wealthy capitalist, when to do so might utterly ruin a struggling zemindar. Remission of rent, corre-

sponding to remission of revenue, is provided for by section 23, Act XVIII., 1873, referred to before.

As regards the question of remission or suspension, the Board are of opinion the latter should in all cases be temporary only, and for short periods, not extending over more than two harvests. Otherwise the future is discounted, and the people are perpetually harassed. If, therefore, there is no reasonable prospect of realising the suspended demand for the next two harvests, the Board would prefer remission at once, as suspension, even if granted, would almost certainly end in remission, without any of the good effects which might have resulted from it in the first instance.

BENGAL.

BENGAL.

Mr. Barlow, Bhagulpore.—We have the permanent settlement in this part of the country, and by law there is neither remission nor suspension of the land-revenue demand when the crops fail. Practically, the assessment fixed at the decennial settlement bears such a small proportion to the real income in case of the majority of estates that it is no hardship to compel payment in the case even of extremely bad seasons. Assuming a year in which, owing to calamity, any estate makes no collections, yet considering the small amount (comparatively) of the annual demand, the continuous prosperity, and good credit which the owner enjoys by virtue of his proprietorship under Government, it is not unreasonable to require him to make good his land revenue. As regards the possibility of collecting the land revenue in a bad year, the sale law completely secures this, and in 1873–74 I do not think that there were more defaulters than in ordinary years. By circular order the Government gave authority to all district officers to refrain from the application of any coercive process to recover the land-revenue demand for the kists falling in January, March, and June 1874, in case of zemindars who might distinguish themselves by employing labour, &c. or showing charity during the famine. Recourse to the rule was not, however, found necessary. I certainly, as regards the landowners in this part of the country, should not begin to think of leniency in enforcing payment of the land revenue until the second year of very severe famine, if even then. As regards payment of rent during bad seasons, I know that a large amount remains outstanding. This is accounted for by the inability of rapacious landlords to squeeze the money out of a poor class of tenants, as well as by the forbearance of the better class of landlords. In a very few and remarkable instances the demand of a notoriously bad year like 1873–74 is remitted by the landlord, but as a rule the arrears are recovered. According to system here, all payments by ryots are credited to the demand longest outstanding. Thus a zemindar may be behindhand with the collections of his current demand, but his arrears are usually low.

Mr. Toynbee.—The land revenue of Bengal (excepting Orissa) is permanently fixed, and it is not a part of the revenue system to grant remission of revenue on account of failure of crops. Considering how enormously the value of land and of produce has increased since the permanent settlement, such a course is quite unnecessary, and practically it is found that the deficits of a bad year are easily made good from the surplus of the next.

In Orissa about 4½ lakhs of rupees were absolutely remitted on account of the famine, and 11¼ lakhs conditionally suspended, which have not been, and will not be, collected—in, all about 15¾ lakhs out of a demand of about 17½ lakhs. For the famine of 1874, only Rs. 28,957 was remitted on account of Government revenue—Rs. 28,649 in the Sonthal Pergunnahs and Rs. 308 in Singbhoom.

The landlords in Bengal have taken full advantage of the enormous increase in the value of produce, which advantage is denied to the Government by the permanent settlement. The rents paid by the ryots generally are proportionate to the present value of the produce of the land: the revenue paid by the landlord to Government is out of all proportion. The latter can therefore afford to pay his Government revenue in almost any year, however great the failure of crop. He can borrow the money on the security of his estate, if he has not got it in his pocket. The ryot, on the other hand, has nothing but his crop from which to pay the landlord. No crop means no rent: the landlord, therefore, has no interest in killing the goose which lays for him the golden eggs.

In Bengal absolute remission of revenue is quite unnecessary, considering the lightness of the Government demand: approximately it is only about one-third of the gross rental, as returned under the Road Cess Act. Temporary suspension might be necessary in cases where there is only (say) a 4-anna crop; in no conceivable case would it be necessary in future to convert suspension practically into remission. The case of Orissa in 1866 was quite an exceptional case, which would not possibly recur in any part of Bengal.

Mr. Finucane.—Suspension of the demand for land revenue was granted in Dinagepore in 1874 only in the case of zemindars who assisted their ryots, who suspended their rent collections, and who co-operated with the local authorities. The Government revenue assessment on the Alapur pergunnah of the Durbhunga district is Rs. 1,810 (eighteen hundred and ten rupees); the gross rental is about four lakhs of rupees, or more than two hundred times the Government revenue; the Government expenditure and famine relief in this pergunnah was in 1874 at least two and a half laks, or considerably more than the total revenue Government derived from the pergunnah from the time of the permanent settlement up to date. I think it evident that, in the case of districts so lightly assessed as most of the permanently settled districts of Bengal are, not only should remissions of Government revenue not be granted, but the burden of maintaining rural populations in years of distress should be thrown upon the zemindars, and so localised that each individual zemindar would have to pay for the maintenance of all cultivators resident on his estate who were unable to maintain themselves. With a 6-anna crop in Durbhunga, State relief would not be at all required, if zemindars did not press for rents. If zemindars did press for rents, in the case supposed, the great bulk of the ryots being obliged to sell their crops, and having, as a rule, little or no savings to fall back upon, would be ultimately obliged to come on State relief works for support. If the demand for Government revenue were suspended in such years, and the realisation of rents were prohibited, little or no State relief would be required, and if any relief were required the option might be given to zemindars of either making, each in his own estate, such arrangements as might be necessary for the maintenance of his distressed tenantry, or of having such arrangements made for him by the district officer. Sums so spent by the district collector should be realisable from the estate as a public demand. The necessity for direct famine taxes would thus be obviated, the strongest inducements towards the improvement of estates and taking precautionary measures against effects of droughts would be held out to both ryots and zemindars, and the latter would have no shadow of reason for saying that the terms of the permanent settlement were not most strictly adhered to. I would merely suspend, and not remit, the Government revenue demand, and would, therefore

III. Qs. 37.

BENGAL.

only ask the zemindar to suspend, and not to remit, his rent demand. On this plan a good zemindar having a prosperous tenantry would suffer little from famine, while an oppressive proprietor, with an impoverished tenantry, would have to pay the penalty of his own misdoings.

Baboo Hari Mohan Chandra.—During the famine of 1874 the land revenue of 61 estates, to the aggregate amount of Rs. 1,00,530 out of the total land revenue of Rs. 17,00,000, was suspended from six months to two years. I consider that when there is a famine it is absolutely necessary to give relief by suspension of revenue, as otherwise the zemindars are sure to press their ryots for rents, which must necessarily aggravate their distress, specially among the poorer classes of the ryots. The profits of the zemindars and tenure-holders of this district are 38 and 8 per cent. of the gross valuation of the district, the Government revenue being 54 per cent.

BOMBAY.

BOMBAY.

Mr. Norman.—It is not a recognised feature of the revenue administration of this district to give remissions, &c. when crops fail. The assessment is, in theory, based on the assumption that the profits in good years should cover losses in bad years. Practically, in those talukas in which the rainfall is precarious, the poorer class of cultivators after a bad season have the greatest difficulty in meeting the demands of Government. The land they hold is of the worst and poorest description, and, though in a good season it yields sufficient to leave a fair margin of profit to the cultivator, in a bad season the yield is absolutely nothing. In practice it has often been found necessary to grant remissions, though this is opposed to the principles of the revenue survey. A subtenant of land usually pays his rent in kind, half the produce being the ordinary amount. Hence he is not so much affected by a bad season, except that his labour goes for nought and his profits are insufficient for the support of his family. As a general rule, I am in favour of suspension instead of absolute remissions. I think the custom of granting remissions in case of failure would cause an unnecessary loss to Government. It often happens that a year of failure is followed by a bumper crop, and in that case, unless the failure were very severe, there would be no great difficulty in recovering the greater portion of the Government demands. I am, however, averse to suspending the collection of the revenue for more than one season. If it has been proved the people cannot pay the outstanding balances in addition to the current year's revenue, the whole of the former should be remitted. In this district, the following remissions have been granted during the last five years, owing to failure of crops:—

Name of Taluka.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.
	Rs.	Rs.	Rs.	Rs.	Rs.
Junnar	103	8,233	1,087	453	None.
Indapur	—	578	5,782	14,230	
Khed	5,016	21,590	2,677	62	
Serur	187	26,399	4,217	182	
Purandhar	—	2,225	80	—	
Bhimthari	18	65,000	16,572	19,141	
Haveli	—	51,421	9,766	594	
Mawal	144	2,511	434	143	
Total	5,468	1,77,957	40,615	34,805	

Suspension does not practically mean remission in ordinary times. In this district, 1875–76 was a bad year, 1876–77 a year of famine, and 1877–78 was also a bad season. In 1875–76 Rs. 34,805 were remitted. In 1876–77 no remissions were granted, and the outstanding balances held over amounted to Rs. 4,56,827. Had 1877–78 been a good year, most of the above would have been collected. As it was, the balances for 1876–77 still amount to Rs. 4,11,514, which is practically irrecoverable. The outstanding balances for the current year amount to Rs. 67,902. If next season should prove favourable nearly the whole will be collected.

Mr. Spry.—It is generally understood that, where the survey has been introduced, remissions or suspensions of the demand for land revenue, when the crops fail, are not to be given. There are no established rules on the subject, nevertheless cases do occur when such have been given. For instance, in the Ahmednagar district in 1872, when there had been a great failure of crops in certain parts, the poorest class of cultivators were allowed remissions to the extent of annas 4 in the rupee, whilst another annas 4 were kept in suspension till the year following. The land-revenue assessments are based on the average of several years, taking good, bad, and indifferent together. I do not think that any exception was ever intended as regards years of extreme drought. That I take to be the principle; but in some parts of the country, for instance in the Ahmednagar collectorate (where I have served several years), the agricultural classes are so impoverished that, be the assessment ever so low, they could not pay up in full in really bad years. Hence practically the principle could not be carried out. The Southern Maratha country, wherein the Kaladgi collectorate is chiefly situated, has a Canarese population, who are more thrifty and better off than the Marathas. In 1876 the crops, so to speak, totally failed, there not being more than 6 pies in the rupee in the Collectorate, containing an area of 5,695 square miles. Out of a land revenue of 12¾ lacs of rupees, 5½ lacs were collected during the year, leaving a balance outstanding of 7½ lacs. This balance, together with the revenue for 1877–78, amounted to 20¼ lacs of rupees for collection, no remissions having been given. During the revenue year which expired on the 31st July 1878 16¼ lacs were collected, thus leaving only a balance of 4 lacs of rupees due for the two years. This revenue was collected with but little distress and sale of property, and then only in the case of recusant well-to-do people. The above is an illustration of how far it is possible to collect land revenue without undue pressure in this district, but it does not follow that the same could be done elsewhere.

It is impossible to lay down any hard and fast rule as to what amount of failure would justify a certain amount of leniency. That must depend upon the ever-varying circumstances of individual years, and upon the general condition of the district. As a broad rule the well-to-do should be made to pay, and leniency only extended to those whose means of subsistence and of earning their livelihood in the future would be crippled by payment.

When an occupier of land pays rent to a landlord, the payment of that rent is affected by failure of crops just in the same way as the payment of assessment to Government is. It is impossible to say whether a remission or suspension of land revenue leads to a corresponding treatment of rent, because the latter rests with the landlord and the former with Government.

Provided the assessments are fixed at reasonable rates based upon the average of years, I am as a general rule quite opposed to remissions. I do not see why a ryot should pay less in a bad year when he pays no more during a bumper year; besides, a partial failure of crops does not necessarily mean so much loss to the cultivator, because in all probability

as in the present year in this district) the amount produced would fetch such a price as to equal what is realised in a year when crops are plentiful but prices low. The practice of giving remissions, moreover, does much harm, as it demoralises the ryot, who, thinking that Government will take the burden off his shoulders, becomes careless in his cultivation and clamours for remissions on the slightest excuse. Further, the hope of getting remissions makes many hold back from paying their instalments.

There are, however, exceptional cases where remissions must and should be given; such, for instance, as in districts where the body of cultivators are greatly impoverished. Also in the cases of Bheels and such like wandering tribes, whom it is an object to get to settle down, but who would be driven away by any Government debt being made to hang over their heads.

I am much more in favour of granting suspensions in cases where pressure would lead to hardship. Suspension of revenue does not demoralise, because it is known that the money must be paid sooner or later.

I think that the postponed demands of bad years should be collected by the end of the second year. Anything that cannot be collected by then probably never can be, and should be written off. Suspension, as far as my experience goes, certainly does not practically mean remission. I think that very much can be collected by it without hardship.

Mr. Ramsay.—The Bombay assessments have been pitched generally low, with a view to meet the accidents of the seasons as they come. Thus, in principle, no remission is to be granted even in a bad year, as one good season is supposed to compensate for one or even more bad seasons. But in practice this is not found to work so smoothly as might be wished. Owing to his improvident habits, a ryot has nothing over at the end of a good year, and the next, if unfavourable, finds him destitute of resources, and he is driven to the money-lender. Hitherto, as far as my experience goes in Deccan districts, there always has been some remission given every year for failure of some crop or other. During the past two years remissions have been discouraged and the system of postponement introduced. The system being quite new, we cannot well yet say how it will work. My own opinion, however, briefly, is as follows:—

However light the Government demand, there will always be a large number of persons in difficulties as to their rent when a bad year comes. Relief to some extent has to be given. In the cases of the more substantial cultivators who have large holdings, irrigate their land, and have a fair amount of stock, postponement of revenue is feasible, *i.e.*, there is every prospect that the arrears will be recovered. With the poorer ryots I think that postponement is illusive and unsatisfactory. It is like hanging a stone round their necks which they cannot get rid of. Some remission must be given to this class, or else they should be sold up and allowed to descend into the class of labourers. But to postpone revenue without much prospect of ever recovering it is worse than idle, for it works actual mischief.

Colonel Anderson.—The land-revenue assessment is based on the principle that good and bad years must be taken together, and that remissions are not necessary, and practically it will be found that, for a long series of twenty or more years in most unfertile talukas with most precarious climate and uncertain rainfall, neither remissions nor outstandings of any but the most imperceptible amount have occurred in any year. These last remarks refer to parts of the Belgaum, Sattara, and Kaladgi Collectorates. In Dharwar, though in parts the rainfall is more uncertain than in others, no part can be called unfertile or of very precarious rainfall. Last year, which was a special one, some small amount was remitted before the policy of granting postponement instead of remission was adopted, and a considerable sum was left outstanding, of which much has been collected.

No specific rule has ever been laid down as to what amount of failure justifies leniency in collection, for the simple fact that, since the first settlement, remissions have become practically unknown.

We have in the south of Bombay no landlord class; some land is doubtless sublet commonly on metayer rates.

The arguments in favour of remission and suspension relatively are as follows:—

If the settlement is on a proper and moderate base, bad years should be compensated by good; and, except under the exceptional circumstances of a series of bad years, remissions should not be necessary, though suspension may be an expedient concession to the people, ease them materially for the time, and cause no ultimate loss to the State except that of interest.

Remissions are bad, in that once given, the people get to hope that they will be again given. Moreover, a system avowedly involving remissions is more to the advantage of the native officials than of any other class. It is impossible in the thousands of applications for remissions, when such are a part of the system, for any proper and trustworthy check to be exercised. The main check must rest in the hands of native officials, who, all experience shows, are not to be trusted in such matters. In one way or another, by corrupt means, more money is taken out of the taluka than is foregone on the Government account. Thus the Government and the ryot lose, and the people and officials are demoralised. In the old system in the Deccan and Southern Maratta Country before the settlement, the revenue system received from the Mahrattas was one of a high unattainable nominal demand from which a portion was always remitted, partly by permanent remissions given before the cultivation of the year, and partly by casual remissions given at the Jamabandi on plea of failure of crops and for other causes. Crop inspections were always made previous to the Jamabandi, and on the results of this inspection the collections were made. Every pretext was resorted to for obtaining remission—deaths in family, house burnt, cattle died, &c. Let the European Assistant Collector, in charge perhaps of from 1,200 to 1,800 square miles, do what he might, it was an impossibility for him to keep up any personal effective check upon the detailed inquiries preparatory to remissions. Officers did exert themselves to effect what they could in this direction, but the more they tried the more they found that any approach to effective control was impossible.

No specific limit for recovering in future years can be laid down. Much must depend upon whether the years following that of suspensions are good or otherwise. But the year or two following a famine must necessarily be years of high prices; if the seasons are only reasonably good, therefore, little revenue should be entirely lost.

MADRAS.

Mr. Longley.—Yes. Remission of the full assessment on irrigated lands, under ryotwari settlement is granted when the land is left waste, or when the crop is totally lost owing to either deficiency or excess of water, provided that such deficiency or excess has not been occasioned by laches of the owners of such lands. Suspension of the demand is not a recognised feature of the Madras Revenue administration, though in the present famine the issue of coercive process for the collection of revenue was suspended for a few months except in the case of well-to-do-persons.

A small deduction, 20 and 15 per cent., in the case

of dry lands and a reduction of the rates fixed for the several groups in the case of wet lands were made from the ascertained gross produce in fixing the assessment of 1871 to cover ordinary fluctuations in the yield; but these deductions were not intended to meet losses occurring in seasons of extraordinary drought, &c., and scarcity. This applies to lands under ryotwar settlement.

It is assumed that a sufficient margin is left to the yotwari landholders to admit of payment of regular assessment of revenue only in ordinary fluctuations, but not in seasons of extreme drought.

The practical state of the case confirms the above assumption.

There has been no *total* failure of crops within the last thirty years, but there was a partial failure in some years. In the present famine the yield in 1875-76 was about 6 annas, in 1876-77 2 to 3 annas, and in 1877-78 about 4 or 5 annas, the consequence of which was that most of the petty puttadars paying revenue under Rupees 30, and a portion of those under Rupees 50, became extremely impoverished, so much so, that a great number of them either found admittance into relief-camps or on famine works, and a number left their homes for other districts in the hopes of bettering themselves; and it may well be supposed that a portion of these have succumbed to starvation. As these petty landholders form the bulk* of the ryotwar puttadars in this district, the collection of the revenue due by them is hopeless.

The above remark applies to the case of puttadars whose *sole means of livelihood is agriculture.* In the case of puttadars who have some other occupations besides, the revenue was collected with great difficulty. A number of them are persons of middling circumstances who have been reduced to extreme poverty or to the level of other petty puttadars owing to prolonged continuance of the famine.

All petty zemindars and other landholders were obliged to borrow money to meet Government demand, as neither class could expect much in such times—the former from his ryots and the latter from his lands. The collection, therefore, in the case of these proprietors was enforced with some difficulty, and they are still in arrears to a large extent.

There is no fixed rule laid down. Most of the landholders paying under Rupees 30, as also a portion of those under Rupees 50 generally supplement their income from land by wages earned by ordinary labor, &c. In times of distress resulting from a general failure of crops labor is not procurable. The consequence is that they fall back on State relief for maintenance. In such cases a rigid collection of revenue from landholders of this description would be undesirable; for they will be compelled to dispose of their *all* for what it will fetch, and such sales would not (with land and cattle depreciated in the market) meet the Government demand, but would simply ruin the cultivator, whilst relaxation in collection or total remission would probably enable these poor cultivators to continue as such. I would therefore propose in future, when the yield of dry lands is between 6 and 8 annas, the collection be suspended for two years and when it is between 3 and 6, a portion, and when less than 2 annas, the whole of assessment be remitted. In the case of landholders paying Rupees 50 and upwards a suspension of a portion of their kists is desirable for, say, a year.

Where the occupant is hopelessly insolvent, the rent must be foregone; but where the ryot is merely impoverished, and there is still hope of his solvency, the landlord requires them to execute a bond to pay the rent at some future period. But it is very doubtful if payment will be made according to the bond Landlords, as a rule, would make no concession to their ryots in consideration of the suspension of the land-revenue by *Government;* but such suspension would certainly relieve the landlord to some extent, as he would be in difficulties because of the non-payment of rents by his ryots. This remark applies to the case of zemindari landholders.

In the case of ryotwari landholders holding directly from Government, who have let their lands to others, the tenants do not pay them when there is a failure of crops.

In the case of wet lands the whole assessment is remitted in all years when there has been no crop or a total failure of crop. If dry crops fail to a large extent, as in times of extreme drought, portion of assessment in the form of percentage is remitted in proportion to the failure. There has been no suspension allowed.

It will not be possible to recover in future years the postponed demand of bad years, if any, except in the cases in which suspension has been recommended above, for a year to puttadars of some little substance.

Mr. Crole.—It is a recognised feature of the revenue administration in this (settled) district (Kurnool) to give relief by the remission of the demand when the crops fail utterly. *Vide* Board's Standing Circular, No. 137-1.

The assessment on dry lands is fixed so as to cover ordinary fluctuations only. In regard to irrigated land there is no charge when Government supplies no water.

The demand is suspended on a general failure, but the well-to-do ryots can always pay, and there is no ground for the assertion that suspension of the demand is equivalent to its remission. It is being disproved, at this moment, by the active collection of the arrears of revenues as settled at the last two Jamabandies, and it is extremely unlikely that any but a small proportion of the postponed demand will have to be written off as irrecoverable. In the cases in which such a course may be found necessary, the cause will nearly always be found to have arisen owing to a mistake in the Jamabandi officer in having brought to demand the assessment of land which, under the rules, should have been properly remitted.

The Madras revenue system can hardly be improved on in the above respects.

Mr. Stokes.—It is a recognised feature of the revenue administration in the district to give relief by remission when the crops fail. The rule for remission is as follows:—

"I.—Remission of the full assessment on irrigation land will be granted when the land is less waste, or when the crop is totally lose, owing either to deficiency or excess of water, provided that such excess or deficiency has not been occasioned by any act or neglect of the persons to whom the land belongs.

II.—In districts which have not been settled by the settlement department partial remission of the assessment on irrigated land will be granted when partial loss of crops is occasioned either by excess or deficiency of water, and such excess or deficiency has not been occasioned by any act or neglect of the persons to whom the land belongs.

In granting this remission no attempt is to be made to estimate individual losses. Excluding fields which have borne a fair crop, as also occupied and unoccupied waste land, the ayacut of each irrigation work under which crops have been lost must be considered by itself. The condition of a sufficient number of the fields which have suffered must be examined and the demand in all the fields that have suffered must be reduced by the percentage thus calculated.

When under similar circumstances dry crops are cultivated on wet land which must otherwise have remained waste, only the highest dry rate of the village should be charged.

---

* Total number of puttadars - - - 188,809
Puttadars paying under Rupees 10 - - 142,495
Puttadars paying between Rupees 10 and 30 40,893

III.—No remission of assessment on unirrigated land will be granted except in very exceptional years or under very exceptional circumstances, and with the sanction of the Board, which must be applied for before the end of January.

This remission will ordinarily be granted without any inquiry into individual losses, as a percentage reduction on the demand of the tract of punjah which has suffered proportionate to the total loss in that tract.

IV.—In all cases where remission is granted, refunds of remitted amounts already paid may be made under Standing Orders Nos. 341 and 341-2.

V.—These rules are to be strictly enforced, and no remissions of assessment are to be granted except in accordance with them."

Mr. J. G. Horsfall.—Clause 7.—The rent is very seldom foregone where the occupier pays rent to a landlord. The landlord does not, however, as is the case with Government, turn out his tenant in case of failure. The rent is carried on from year to year, and is recouped with interest in favorable years.

Clause 8.—With regard to ryotwari lands the present system seems advisable. The assessment has been calculated and fixed upon the average outturn of several seasons—good, bad, and indifferent,—leaving out, however, such seasons as a famine year. In extraordinary years consequently extraordinary relief measures are needed. The ryot lives upon the produce of his land, but that is all, and his savings will not, as a rule, enable him to meet a succession of adverse seasons. Our present system is a little harsh in one respect,—failure to meet a single instalment is followed by the attachment and sale of the personal and real property of the defaulter, resulting in a loss to Government. The zemindari system of allowing the excess in good years to be made to meet the default in bad years might with advantage be adopted to some extent. Such a procedure would lead to large outstanding balances appearing in our accounts at the end of the year. I do not see, however, that this is of vital importance.

Clause 10.—In a famine year remission is positively required, because, as stated above, the assessment has been fixed upon the average yield of the land. I see no reason to doubt, however, that excluding a famine year, the assessment could be collected in subsequent years were a system of suspending collections in ordinary adverse seasons introduced. The system has been practised in zemindaris from time immemorial. In the Nuzvid estate now under the Court of Wards, I find arrears still in the accounts of over thirty years' standing, and yet not considered irrecoverable.

Mr. Martin.—I consider that remission is a mistake altogether. Our assessment is at present exceedingly light, and fosters a number of pauper proprietors who speculate on some days of idleness if their crops are good, and on remission if they are bad. Those men who have a real interest in their soil will always take up enough land to live by, and give themselves a margin which may tide them over a bad year, but they may not be able to pay their revenue in all cases without great hardship. Suspension to such persons is a great boon, and the revenue is perfectly safe with them.

I do not think that more than 5 per cent. of revenue suspended is virtually remitted.

The people pay in every case what they can, and when they cannot pay they either emigrate or become day-laborers.

Mr. Soobien.—If the occupier of the land pays rent to the landlord in kind, then the failure of crops implies nonpayment of the rent. If the rent is paid in money it is generally customary with landlords to collect it though there is a failure of crops. In this respect the collection of land-revenue, which in failure of crops is usually remitted, differs from the collection of rent. The argument in favor of granting relief by means of suspension of land-revenue is that it removes one item of expenditure for the ryot at a time when he is hard pressed for money for his ordinary expenditure. The idea that he is still a debtor to Government weighs on his mind however, which is totally removed if the land-revenue is entirely remitted. Owing to the frequent division of lands and other causes the majority of agriculturists are landholders of petty holdings and are men who live from hand to mouth. The postponed demand of bad years would in the majority of cases press hard upon the ryots when it has to be paid in addition to the current demand of the year. In a large majority of cases in which suspension of the collection of revenue is granted suspension does not mean remission, but recourse to coercive measures for its collection becomes necessary in many cases, and this presses very hard upon the ryots. If any relief is therefore proposed to be given in the matter of collection of land-revenue, it would be preferable, I think, to give it in the shape of remission.

MYSORE.

Mr. Ricketts.—It is not a recognised feature of the revenue administration in this district to give relief by the remission of the demand for land revenue, when the crops fail, *i.e., partially*. The land revenue assessment is based on the principle that profits of good years should cover losses in bad years. It is not assumed that a sufficient margin of profit is left to the landholders to admit of the regular payment of the revenue under all vicissitudes of season, but only in the ordinary fluctuations that occur excluding seasons of extreme drought. It has not been found possible to collect the whole land revenue in a year when the crops have totally failed. It is not then merely a case of undue pressure, but it is an impossibility to answer fully the question as to what amount of failure of crops is held to justify what amount of leniency in collection. Other collateral questions have to be gone into, such as, (1) whether the crops of a few preceding years were good or otherwise; (2) whether the landholders are well off as a rule or the reverse. There was a very general failure of crops in 1876–77, and the authorized remissions amounted from 11 per cent. in the best taluk to 34 per cent. in the worst affected taluk, or an average for the whole district of 23 per cent.; yet there was an unusually heavy balance remaining at the end of the year, viz., rupees 3,45,003, out of a total land revenue demand of rupees 7,11,714. With such known results for 1876–77, the policy of no remissions, but merely postponement, in 1877–78 appears of very doubtful advisability.

Where the occupier of land pays rent to a landlord he would expect similar remission or suspension as granted by Government to its ryots.

The arguments in favour of giving relief in form of suspensions I presume are that Government cannot afford to forego the suspended amount altogether, and knowing that there will only be suspension and not remission, it will teach the ryots to be more straightforward and provident. In favour of remissions it is to be said that ryotwari accounts are annual, and that it is highly advisable to settle and close them annually; and when a ryot is remitted a part, he makes endeavours to pay off the balance, whereas, if only suspended, he gets discouraged, makes no attempt to pay off, and lives in a hand-to-mouth sort of way, which not only prevents Government recovering the sus-

CH. III. QN. 37.

MYSORE.

pended amount, but interferes with the well being of the ryot, drags him down, and with him the Government revenue. It is highly inadvisable to encourage anything like domiciliary visits from petty revenue officials to villages and ryots' houses. With "suspended" amounts hanging over their heads, the ryots will never be free from such annoyance and oppression. A ceremony may be taking place in their house, and down will come the tax collector to ask how the ways and means were forthcoming when there was still a balance due to Government, and he would probably remain importunate and obdurate till bought off by a fee or bribe. In fact in this new system of suspensions I see a fine field for petty frauds on the ryots, but the harvest will be reaped by taluk officials and even village servants, and very little of the suspended amount will go to Government. Far better is it to decide carefully and once for all what is to be remitted and then absolutely remit that amount. The ryot will strive to pay the balance and then he starts free and exerts himself again to his own benefit and that of the land revenue. I have conducted jamabandi on the ryotwari system from 1856 or so up to the present time, and never before knew or heard of such a thing as suspension. There were remissions where necessary, and the balance had to be and was paid up somehow or other.

I believe that "suspension" practically means "remission" (with an intervening incubus of oppression and extortion on the ryots) in all but a few cases.

In former years when the ryots were not so prosperous as they are now, the conduct of jamabandi required great care and inquiry. The necessary remissions were made, and it was expected that the balance should be collected within the year. The balance uncollected was pretty easily divisible into (1) recoverable, (2) doubtful, and (3) irrecoverable.

Pressure was brought to play to recover No. 1 in full. No. 3 was sent up for remissions, and very soon No. 2 resolved itself into either No. 1 or No. 3, and with like action. And all the above had to be done so rapidly, so as not to interfere with the fast approaching season of a fresh year's collections. Now we have the outstanding balances of 1876–77; similar outstanding balances, as well as suspension amounts of 1877–78, and shortly collections will commence for 1878–79. In fact the accounts and everything threaten ere long to be involved in inextricable confusion. That hitherto the collections have been so moderately fair is, I think, in some measure owing to Mansion House money.

CH. III QN. 38.

QUESTION 38.—VILLAGE INSPECTION, AND DISINCLINATION TO SEEK RELIEF.

Is the duty of searching out distress in time of famine in the villages and the people's homes one that properly belongs to Government, or is it sufficient for Government to offer means of obtaining relief, and to expect that the famine-stricken will come of themselves and make use of those means? If it is proper to depute special officers to inspect villages and urge the people to accept the relief offered, what steps do you consider necessary for strengthening the ordinary district staff and enabling them to carry out this duty? What class of officers should be selected for such duties, and what areas assigned to them? May these officers best be servants of Government, or should they be taken from the non-official class? What should be their precise duties, and what supervision should be provided to see that they carry out those duties? At what period may it become expedient to organise such an extra famine establishment? To what extent, and under what general circumstances, has there been any tendency on the part of the people in distress to reject measures of relief offered to them? Where determined disinclination has been shown by any portion of the population to leave their villages and go to relief works or poor-houses, what has been the probable cause of such a state of things? Can it be traced to improper arrangements for the reception of applicants for relief or for admitting them to employment on works, to an insufficient allowance of food or wages, or to any such causes? Can any other causes be named which may have conduced to the disinclination to seek relief, such as physical prostration or habitual want of confidence in officials, &c.

Punjab and North-Western Provinces.—Opinions not expressed strongly in favour of village inspection and relief. Some expressed against it. The people are stated to have been deterred from seeking relief by the Public Works management, by the conducting contractors, by the cold of 1877–8, by dislike of cooked food, by reports that they were to be sent to the Colonies.

Bengal.—Opinions not unanimous, but the majority hold that it is the duty of Government to take early measures to seek out distress in the villages. It should be done by the village circle system used in Behar in 1873–4. Government officials are most efficient for this work.

Bombay.—Village inspection is the most important feature of famine management. There should be at least a deputy collector to each taluka, and also an extra mamlutdar for famine work. Under them, inspectors, one for each five villages. Villages should be inspected weekly.

Madras.—Twenty-four European and two Native gentlemen have replied.

There is a general consensus of opinion that distress must be sought out if mortality is to be averted, and that at an early period of the famine an inspecting staff should be organised for the purpose. So far as possible this body should be composed of public officials, and their operations conducted under constant and efficient supervision.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—If the means of obtaining relief are offered in good time, and before the people who are first affected by the high prices which foreshadow a scarcity are too much reduced in strength to perform a task to which they have not heretofore been accustomed, and a light task only is in the first instance exacted, then I do not think that at the commencement of a famine it is the duty of Government to search out distress in the villages and people's homes until good reasons can be assigned why the means of obtaining relief are not sought out by the people themselves. If the distress is real and the relief is suitable, the people will seek it of themselves without being forced to accept it.

When a demand for employment first showed itself in this district at the end of August last year I made arrangements with Captain Western, Executive Engineer at Narora, for the employment of

CH. III. QN. 38.

NORTH-WESTERN PROVINCES.

by each officer; they might be civil officials, borrowed from neighbouring districts; they should keep the people informed of the means for saving them, and if any valid objections are made to accepting relief the objections should be clearly brought to notice and disposed of; if no valid objections can be made, I think nothing further need be done, and it may be left for the people to accept or refuse assistance as they please.

It frequently happens that persons in distress cannot go to relief works, because they will not leave some aged relative or helpless children, or they fancy they will be sent to some distant district; hearing that works are on the Cawnpore road, for instance, they conclude they will have to go to Cawnpore; or if weak persons have been turned off by gangsmen and sent home, others would be disinclined to go. This is a charge that has very frequently been brought against gangsmen, apparently with truth. Physical prostration is probably a common cause, but this could be overcome by any officer known to and respected by the people.

BENGAL.

BENGAL.

Mr. Barlow.—I think that village visitation in time of famine is a duty that properly belongs to Government, (1) because it is one of the most effective of all relief measures, and therefore should not be omitted when Government is straining every effort for the public good; (2) by habit, and not of malice, the people generally are so slow and dull that the country must be searched and all must be guided and helped toward relief before it can be assumed that a fair opportunity of saving their lives has been afforded to every one. I cannot suggest a better organisation for relief work than the circle system we had here in 1873–74. Officers who have worked in this capacity will be the best judges of the area or number of villages that one man can efficiently supervise, and these also will give the best account of the precise duties of the appointment, supervision, &c. But to one thing I can bear testimony, viz., that, whether selected from the official or non-official class, you require in every one of the posts a picked man of high merit, and, failing this, everything is a failure. Supervision is useful to regulate and examine results, but it has no motive power necessary for famine work. A circle officer, to be efficient, must go on discharging, at a high pitch of energy, duty the most unpalatable and overwhelming. High qualities are wanted for this. The right kind of man would probably be most easily found in the official ranks, and it may be added that, where the standard is not reached, an additional security is found in the fact that a man is an official, but for a good man it matters little where he comes from. The organisation of a complete famine establishment would appear to become expedient as soon as it is discovered that distress is of a very severe character, general, and otherwise than temporary. The cases alluded to in the latter portion of this question have not occurred in my experience.

Mr. Worsley.—I do not consider that it is the duty of Government to search out distress in time of famine in the villages and people's homes. If relief works are opened at a sufficiently early period, the people have only themselves to blame if they stay at home and starve. It is in my opinion no more the duty of the Government to search villages in time of famine for persons in want of food than it is its duty in ordinary times to search for persons in want of justice. The people should not be treated as children, but they should be made to understand that they must use their hands and feet, and not show themselves inferior to mere animals. If we once admit that we are bound to search for distress, we must be prepared to carry food to distressed persons if they decline to come to us for it. No difficulties under this head occurred in 1874.

Mr. Toynbee.—In my opinion it is simply sufficient for Government to offer definite means of obtaining relief, and to expect that the famine-stricken will come of themselves and make use of those means. Where the famine is severe and confined to a small local area it might be possible to adopt the course suggested in the first part of the question; but it would be financially ruinous to do so, even if it were possible to find sufficient agency. Where famine is not severe and widespread such a course would tend to the utter moral ruin, helplessness, and degradation of the people. It would be fatal to the continuance of that large-hearted and far-reaching system of private charity which forms a part of the daily life and religion of the people, and which in times of scarcity and distress should be tenderly nursed and encouraged rather than supplanted by the State and left to die a natural death. I should earnestly deprecate any resort to the procedure indicated in question 38, except under the special circumstances under which it was undertaken in Orissa in 1867. Such a measure would paralyse the executive power of a Government, to say nothing of its finances.

Mr. Finucane.—In the early stages of the Bengal famine of 1874 many persons would, I think, have starved if Government had contented itself with offering the means of relief and had not sought out distress. I consider it was then the duty of Government to search out distress in the villages and in the people's houses. I do not, however, consider that it will be necessary to search out distress in any future famine occurring in the same parts of Behar or Bengal. The people are sure to come forward and seek State aid of their own accord. The only difficulty will probably consist in excluding unworthy applicants. The class of officers who answered best for village-to-village inspection as relief superintendents were sub-deputy collectors of the subordinate executive service and native military officers, such as duffadars, subadars, &c. Their duties should be to visit every village in their jurisdictions, say, once a month or oftener, to inspect the recipients of gratuitous relief, and to see that nobody was in receipt of such relief who could get on without it; while, on the other hand, they should take care that all persons who really were in need of gratuitous State relief were in receipt of it.

Mr. Marindin.—It is the duty of Government to place relief within the power of the weakest and most ignorant to obtain it. The obligation to save life in a famine extends just as much to saving the life of very young children and persons confined to their homes by sickness or old age as of the rest of the community. Such persons in many instances cannot come themselves in search of relief, and unless they are sought out by Government must die of starvation. Besides seeking out such persons, it is the duty of Government to place the means of relief within their reach, which must be done either by conveying food to them in their homes or transporting such persons to the nearest poor-house; but I do not consider it part of the duty of Government to urge people to accept the relief offered.

While it is obligatory on Government to search out and bring relief to persons of the above description, it can hardly be said that this duty extends to conveying relief to the doors of those who are able to come to the central spots where relief is obtainable: it then becomes a question which is the best way of operating—administering relief in village or at central depôts.

I have had no experience of general relief by the poor-house system, and am not prepared to discuss

a poor-house. Everything there is under one management, and the medical arrangements are simplified and concentrated. The poor-houses at the zillah station, at the taluka station, and at the branches would be supplementary, and in addition to them at each large relief work there could be weakly gangs, or what we call civil agency gangs, who could be gradually drafted to the Public Works Department gangs.

The civil officers, then, with their inspectors, would be engaged in inspecting villages, sending the infirm, reduced, &c., under care of the police, to the nearest poor-house in the first instance, and then those who were in a fit state should be drafted to the central relief work. No inspector should have more than five villages to inspect. When I inspected a village I sent word to the patel overnight to have all the villagers drawn up in one line—men, suckling mothers, mothers with children, other women, boys, girls—outside the village by a certain hour, when I was careful to be present. Before inspecting them I proceeded into the village accompanied by the patel, and we made a regular house-to-house visitation.

Having learnt the number inside the village and their condition, I proceeded to those outside, and I picked out those who required special treatment, and then gave orders regarding their disposal, some to be sent to a relief work, others to the relief house, &c.; some required to be carried in carts, others could walk. All were sent under the charge of the police, food being provided for them, and batta given according to the orders of Government. So many were to be fed in the village by the patel. These were generally children of robust parents or of parents who would not feed them. I then called for the village registers and inspected them, and compared the mortality of this year with that of the last, inquired the census number of village, and compared the number present, inquired how the deficiency was accounted for, how many had gone to relief work, how many had emigrated, how many had died, how many houses were deserted, what was the price of grain, the condition of the water supply, &c., rainfall, prospects of cultivation, &c. &c.

The Mhars and Mangs were the most difficult people to deal with. At the commencement of the famine they were well off, as they eat the carcases of the dead cattle; but as the cattle disappeared they suffered extreme distress, and would not go to relief work even when close by. Inherent laziness and blind fatalism can be ascribed as the only cause of their disinclination to go to relief works.

This disinclination to move on the part of these people seriously complicated our relief measures, and I hope that the legislature will provide power in any future famine to compel them to go to relief works. Doubtless, as the famine became protracted, physical prostration was a factor in producing this disinclination to move out of their villages, but in my opinion it was principally due to their inherent laziness and disinclination to work.

Mr. Norman.—I think it very doubtful whether Government should undertake the duty of searching out distress, and at any rate this system should not be introduced in the early part of a famine. The village officers are acquainted with every one in their village, and to them in the first instance should be entrusted the duty of taking care that no one dies of starvation. This was done during the last famine. When the distress becomes very severe, it may be necessary to appoint village inspectors in sufficient numbers to ensure that each village shall be visited at least once a week. These men should all be Government servants of the ordinary karkun class. It would be their duty to supervise the village officers, not to search for distress, but to investigate all cases brought before them. My experience does not lead me to suppose that people will die sooner than go to the relief works or to a poor-house. Many causes lead to a disinclination to go to the works, such as hard work, poor fare, and much exposure, but this disinclination cannot, in my opinion, be traced to any cause capable of remedy. Relief works cannot be made too inviting, the object being only to support those who have no other means of subsisting. If they desert or prefer to remain in their homes, it may be assumed that they have some other means of subsistence.

Mr. Spry.—If Government undertakes famine relief, I think the duty of searching out distress in villages and people's homes is a concurrent obligation without which the relief would be both inadequate and incomplete, because, in thousands of cases, unless the people are literally forced to go to relief they will not go.

Under ordinary circumstances an assistant or deputy collector has three, and often more, talukas under his charge. When a special famine establishment is entertained, there should be an assistant or deputy collector to each taluka; then there should be a relief mamlatdar in each taluka, and if the taluka should be a very large one, or having many outlying villages, there might be appointed some one or two divisional inspectors, having each 30 or 40 of the most distant villages under them. Lastly, there would be the circle inspectors, who would each have in their circles a certain number of villages, varying according to propinquity to each other and the intensity of the distress. From 12 to six villages in each circle are what I have found necessary. For efficient supervision it is a mistake to have the circles too large.

The higher classes of relief officers, such as relief mamlatdars, should certainly be Government officers. I have found selected chief constables to be by far the most efficient for this purpose. For the lower grades, if they can be procurable from other departments, such as the medical, educational, or police, it is much better to select qualified men than to have outsiders. The duties required, and a certain command over money, make it essential that circle inspectors, &c. should have some stake in Government employ which outsiders, temporarily appointed, have not. During famine it is necessary to entrust all patels of villages with small sums of money to relieve casual and unexpected cases of distress. Accounts of this expenditure and a register of cases relieved have to be kept. It is the duty of the circle inspector to visit each village say twice weekly, to inspect these accounts and registers, and also to make house-to-house visitations to see that people are properly relieved and that none are starving. The divisional inspectors and relief mamlatdars will then come and see that not only the circle inspectors do their work, but also the village officers. The latter also will scrutinise the accounts of all the subordinates, and keep them supplied with money when their balances are expended. They will, further, look after all the relief houses and civil agency works in their charges. The assistant or deputy collectors will exercise general control over the whole.

I think it would be as well to begin village inspection as soon as people begin in any numbers to wander about listlessly without object. I think it would tend to inspire confidence in them and keep them at their homesteads.

Caste prejudices and disinclination to leave their houses often induced people to reject relief. Fatalism had also much to do with it. Many lingered on in hopes of a favourable turn, till they got so reduced that relief became almost useless. There have always been a certain number of such in each town and village. I have not found any reason for believing that any determined disinclination arose from want of management. The disinclination was more that of individuals than of bodies of people. If it had been the latter there might be cause for believing that matters were not as they should be. As regards want of confidence in officials, I think that in this district at least the masses of the people appeared to place the greatest confidence in the European officials, and also in some of the native ones. If an official did his work he soon gained confidence, and *vice versâ*.

Mr. Moore.—It should be sufficient for Government to offer relief and the people ought to come, but unfortunately they do not come, and they require to be sought out. I think that the machinery we used was effective, viz., schoolmasters and sub-registrars for the towns in which they reside, police and general duty karkuns, a few special inspectors and bailiffs of the civil courts. The class mentioned above. Better be Government servants. They should do house-to-house inspection every day, and general inspection of the villages night and morning, to see that every one who is in need of relief gets it; if he is close to work, that he is sent to a work; if he is sick, but fit to be moved, that he is sent to a relief kitchen; if they are sick and unfit to be moved, that they are relieved at home.

When it is clear that lengthened scarcity may be expected. To no great extent, only in exceptional cases. Obstinacy. It cannot be traced to improper arrangements. I can name no other cause than that given in answer to question 8.

Mr. Ramsay.—I reply to this question only in so far as I have any personal knowledge. There is undoubtedly a very great disinclination on the part of the people to avail themselves of Government means of relief. In the first place the tests imposed are distasteful, natives preferring to work their own way, at their own hours, under little, if any, supervision. The maxim of a fair day's wage for a fair day's work is not understood or appreciated. Thus during the past seasons numbers temporarily emigrated in search of a precarious livelihood rather than work under the Public Works Department system. I can only attribute this to peculiarity in the temper of the people, and not to any special want of confidence in officials and official arrangements. Natural indolence too has much to do with it. What the people want is work near home, no tests, and little supervision. They hate all rules, methods, systems, and punctuality especially. Bhils and other hill tribes, as is well known, earn a living by really very hard work, such as wood-cutting, for instance. But they prefer starvation to going to more regular though really lighter work on roads or tanks at fixed hours.

Col. Anderson.—The searching out of cases of distress theoretically can hardly be viewed as the duty of Government. But practically, if no measures in this direction were taken by Government, much life would be lost.

As regards the area assigned as the circle of each inspector, that must entirely depend on the density of the population and the distances of villages apart.

The duties of these circle inspectors should be to inspect with the village officers the entire population of each village in their circle every week or every other week, according to the circumstances of the time, and to require the village officers to send off starving people to the relief houses or works. He must particularly search out starving children, as the people of the lower castes will often see their children starving sooner than be at the trouble of sending them for relief. A difficulty is often alleged as to the means by which infirm people are to be sent to relief camps. This duty should be imposed upon the village by law, and be recovered rateably on each house if necessary, should the village officers not privately arrange to get it done, as they always can if they choose. In rare cases the circle inspector should be allowed to give temporary relief on the spot, with the concurrence of the village officers; all such cases should be registered and signed by both. On such cases the strictest check must be kept, and, except in extreme and exceptional cases, the recipient be soon removed to a relief house.

This extra establishment will not be required until famine is decidedly declared, and it is no longer mere scarcity.

Have never heard or seen any objection on the part of the people to accept relief. The nearest approach to it which I have seen has been the lower castes not sending their children to a relief house when evidently in a starving condition, and when they admitted inability to feed them themselves; simply too much trouble to send the children to a relief-house.

MADRAS.

Sir W. R. Robinson.—Whatever it may be possible or expedient to *do* in future in relief of famine where it first and most prevails—viz., in the villages and homes of the drought-stricken tracts and in outlying parts of the country—from whence experience shows that the starving only partially seek our works and closed camps, and often too late for any practical purpose,—it is clearly the pressing duty of Government to search out this want and its victims from the very first, and to know what is going on in famine times in such homes in every village and town in the country. It will not do simply to await the monthly mortuary village register. If I were asked to indicate the most serious shortcoming in the administration of the Madras famine throughout, the most fertile cause of confusion, inadequate appreciation of the occurrence and probably of unexpected mortality, I would at once point to our inability to grapple with thorough village inspection and administration in the first stages of the famine, and to a probably inadequate appreciation—the error has been partially rectified in the later stages of administration—of the vital importance of village administration and village relief throughout the protracted occurrence.

Even as respects famine finance I believe that village relief will prove—man for man—more thrifty and life-saving than any other, so far as gratuitous relief is concerned, while there are obvious social and economical advantages in the system which brings the rich and poor into mutual relations and keeps the people together; a village system of relief should therefore be brought into influential action the moment famine threatens.

I have already indicated the kind of village administration which is needed more especially in famine. I will only add that inspection of village relief and administration by State officials must be provided for from the very first—with a view to adequacy and thrift—and the addition to existing taluk establishment required to make the inspection complete should be the first step on the danger of famine arising. And if the constitution of the village agency be effective and complete, this inspection may be confided to *superior* native agency. I doubt whether low-paid village inspectors are reliable.

Mr. Longley.—It is certainly a duty which belongs to Government to search out the class of persons mentioned in Question 31, Section 2, Chapter III, and should be done by a separate paid establishment proposed for each taluk in the answer to the above Question (31).

The ordinary taluk establishment could not undertake the work, but they would assist the special paid relief establishment of the taluk, at the head of which should be one or more European officers according to the size of the taluk. A relief circle should never exceed one taluk, and each taluk should be sub-divided into two or more sub-circles with a paid inspector in charge of each sub-circle.

The extra relieving establishment may be composed of officials and non-officials (paid), but my experience

leads me to believe that an European officer should be at the head of any such establishment. *Natives* would have no confidence (whatever the Government might have) in a purely native relief establishment, non-official and unpaid, unsupervised by an European official. Each inspector should visit every village and hamlet in his sub-circle *once a week*.

Committees, however, may be formed associating respectable natives with European officers for supervising gratuitous (dole or out-door) relief. In such cases the former must be paid charges incurred in travelling, &c. If a Government officer of high position and respectability is made president of the committee, I have no doubt the system would work well; we have instances of this in local fund boards, and municipal commissions, and in the late local famine fund committees. If, on the other hand, the committees are to consist of purely native non-official element, they are certain to prove a failure, of which, if a pregnant example were wanting, I would point to the Temple committees.

This extra establishment should be organised when famine has been clearly diagnosed.

There has been a great disinclination on the part of the people to leave their houses and villages to go to relief works or to camps. The following may be assigned as reasons for this disinclination:

(1)—Knowledge that, as soon as they leave, their houses will be rifled, the rafters taken for fire-wood, and the straw for cattle.

(2)—Unwillingness to be away from their village when favorable rain may fall.

(3)—Knowledge that a large number of those who enter a relief-camp die there, and consequent fear that they will also die away from home.

(4)—Fear that on return they will not be admitted to caste privileges.

(5)—In the case of relief-works, uncertainty as to proper payment and fear of disease where large numbers are congregated, the sickness on any work being, as a rule, greatly exaggerated.

(6)—Apathy; a preference for a precarious existence (but free of trammels or tests) on wild fruits, roots, &c.

(7)—Among the hill-people a dread of the plains and large towns.

(8)—Physical prostration.

(9)—Among the following classes:—

Brahmins,
Rajputs,
Banians (Komities),
Chetties (of all description),
Thondamundalam Vellalars,
Sri Karnams,
Sathanies,

very strong caste and social prejudices against going either to a relief-work or camp; and for these the only relief, to be really such, appears to be the money dole in their villages.

Mr. Price.—As regards poor-houses, during the real pressure of the famine the people were exceedingly anxious to get in, but when village relief got into full swing, the poor-houses were at a discount. Stories of the most extraordinary kind were set about, probably by designing village officers who wished to have the handling of as much money as possible and to keep the people on village relief. Amongst these I may cite the following:—

(1) That Government were collecting people in Cuddapah poor-houses and fattening them in order to, when they were in a fit condition, hold a Juggernath festival and crush them to death under the wheels of a train.

(2) That Government were taking the people in, in order to ship them off to "Mourice" (the general term for any country to which emigration takes place), there to keep them for the term of their lives as slaves.

(3) That the object of Government in opening poor-houses was to decoy all that they could into them, destroy their caste, and make Christians of them.

(4) That no one who went into a poor-house ever came out alive. These and similar canards no doubt kept many people away from relief, but I believe that the main cause was the irksome character of the life, the want of liberty, of betel or tobacco, the regular hours, enforced cleanliness, and perhaps, association in the same enclosure with people of all kinds; but the restraint and discipline were what mainly rendered the poor-houses, as the famine diminished, more and more unpopular and this unpopularity was intensified by the freedom enjoyed by those on village relief, and the opportunity which this afforded for wandering about and begging, picking up greens in the fields, and so on. I cannot call to mind any causes other than those mentioned; physical prostration would prevent people going to works or poor-houses, but I do not think that it had anything to do with their inclinations. As for habitual want of confidence in officials, I never heard the reason advanced, though I have heard many of them called rascals, and I think not without some cause.

Mr. Grose.—In my opinion people should not be allowed to die of starvation even if they wish to, and there are many cases in which starving people are unable to move towards relief, so that it is the duty of Government to search out distress in the very houses of the people.

This search must be conducted first by the Revenue inspectors assisted by the village officers, and afterwards by specially appointed officers of the same grade. Their ranges should be of such a size that they can visit each village in it at least once a week. They should be officers in the ordinary employment of Government who look forward to pension.

They should be required to inspect every village once a week, to inspect every house occasionally, to see that the village officers do their work, to examine the registers of village relief, to inspect or secure the *bonâ fide* inspection of all new applicants for relief, such as gosha women, to give food, or pay village munsifs for giving food when starvation cases are found, and to see that such cases are sent to the relief-camps. Tahsildars and deputy tahsildars can supervise to a certain extent, but when the duties of these men are onerous and responsible, the supervision of an European officer is required.

As I have already stated, I think that a special organisation for village inspection should be started when the reports of the village corporations and Revenue inspectors have shown that relief-camps should be opened.

People show a great reluctance to enter relief-camps, chiefly because there are such a large number of deaths in them, as there must be when they contain crowds of emaciated people. The reluctance to enter on particular works and the tendency to leave them I have already spoken of.

I have not noticed habitual want of confidence in officials acting as a cause for the refusal to enter relief-camps, or go to relief-works, but such a want of confidence undoubtedly acts with reference to particular individuals. Any severity or harsh usage of which they may be guilty with regard to paupers is always exaggerated. It is one of the dangers to be kept in view that if relief-works or relief-camps are made *too* disagreeable, paupers will hesitate to go to them till they fall into such a state of physical prostration that they are unable to do so.

Mr. Lee-Warner.—The work of searching out distress in the village is not a duty that properly belongs to Government. It is sufficient that Government offers the means of obtaining relief at sufficiently numerous selected centres. Inspection of the villages is none the less necessary to procure information showing whether the centres selected are sufficiently numerous to meet the wants of the people or not. For this work every large village ought to be visited at least once a week by a revenue subordinate, who, if he has other duties, cannot well manage more than an area of fifteen square miles; but it is to be borne in mind that in time of real famine other revenue duties are very slight. Villagers will never refuse to accept relief in the villages. They dislike going to relief-works or poor-houses away from their homes, because of their attachment to their own homes, some concealed means of subsistence, or superstitious or other motives. I remember, however, an instance of villagers declining to take money-dole. It was my first visit to the village, and I selected about ten persons for gratuitous relief on the money-dole system after a minute inquiry in the village as to their circumstances. While the copper coins were being fetched, a heavy shower of rain came up, the first shower after months of drought, at the end of which the village headman came forward to beg that relief might not be given. Thinking that the persons selected might have a different opinion, I proceeded to pay them myself, but they were evidently afraid; perhaps the village headman had a superstition that the receipt of any gratuitous relief might ruin the village, or thought that this first shower was the beginning of change, and that people hanging about to get gratuitous relief would not come to his fields.

Mr. Austin.—It is, I consider, undoubtedly the duty of Government to search out distress. It is not so much that the famine stricken will not come forward, but they do not know where to go to make their distress known. In many cases, moreover, they are afraid to come forward. They dread being taken from their homes; they dread being sent off to camps. Therefore special officers must be deputed to supervise relief. The ordinary district staff is wholly insufficient for the purpose.

Mr. Martin.—Unless Government search out the people in the villages, there *must* be great mortality.

There are, I think, two different kinds of inspections necessary. One should be made immediately when it appears undoubted that a great scarcity, if not famine, is imminent. This should be made by the deputation of a great number of officers from the nearest districts aided by the superior native officials of the threatened district, and should be with the object of assuring the people that relief will be provided when necessary, and informing them of the places to which emigration will be dangerous and of those to which they may safely go. Officers should be sent at the rate of one to each tract of thirty villages, and each deputed officer should make this preliminary inspection in three days, and be ready to return at once to his own duty if not ordered to remain.

I would make it the duty of the inspecting officers to see their whole charge twice a-week, and to be present at the distribution of the village relief in each village once a-week. They should have control of the birth and death registers of their charges, and certify that they have tested the accuracy of the entries in them. They should attend to the water-supply of the villages, and when it is very impure get leave to improve it by famine labor detailed from a famine work (I regard the frightfully bad water-supply during a famine as largely responsible for the immense mortality from internal diseases), and they should have at their head quarters a depôt for the reception of applicants for labor, where they should class the applicants into those for professional agency and those for civil agency works, and pass them along to the nearest similar depôt in the line of route to the work, to be thence passed on in a similar manner.

I found at first a disinclination on the part of many people to leave their villages. It was before the village money-dole relief was instituted, and principally was among the old, debilitated people who wished to die at home, and who afterwards were recognised as persons to be relieved at home. After the institution of village money-dole, the objection to leave the villages was almost altogether arising from the hope that the objector would succeed eventually in getting on the money-dole register.

Mr. Oldham.—I have never had experience of any general disinclination shown by the people to go to relief-works, unless these works were at a distance which they considered inaccessible. The exception to this is the systematic vagabondage described in the answer to paragraph 36. The people resorting to it are isolated units or perhaps families.

In Orissa people of the respectable classes—none in fact but low caste-people—would go to the relief-camps. This disinclination had nothing to do with improper arrangements for admitting applicants to relief.

In isolated instances, which have at some periods become pretty numerous, persons have been found disinclined to seek relief, from physical prostration, from habitual want of confidence in officials, and most commonly from arrangements on relief-works which either were not, or which they thought not conducted in a way calculated to give them relief

Mr. Gillon.—The system at present in force in the Madras Presidency seems to be very well suited to attain the ends in view. One European relief officer is appointed to supervise a limited area which varies in extent according to the severity of the distress. In the height of a famine this should not exceed half a moderate-sized taluk or include more than sixty villages, unless they are very close together. In the early stages of distress, and when it is on the decline, one officer will suffice for one or two taluks. Under each European relief officer are a number of native relief inspectors, who receive from Rupees 25 to 35 a month, and have one or two peons each to carry reports and returns, and assist the inspector in his duties. Each inspector has to inspect a certain number of villages varying from ten to a much larger number, according to the severity of the distress. It is the duty of the relief inspectors to search out all cases of distress, and to deal with them according to the rules that may be prescribed, giving orders of admission to the relief-works or village relief, despatching bad cases to the relief-camp, &c. They have also to see that no one receives relief in any form who is not entitled to it, and to report regarding the state of the country and changes in prospects, &c., in each village. Where there is no village relief, the duties of the relief inspectors are comparatively light and easy; but this is by no means the case under any system of village relief, as will be seen from the remarks in reply to Question 31. This establishment should be organised as soon as it becomes evident that scarcity is deepening into famine. It may not have much employment at first, neither, indeed, should a large establishment be appointed at first; but it is important that relief inspectors, and more especially European relief officers, should as early as possible become acquainted with their respective ranges. It is from these officers only that Government can obtain trustworthy information regarding the state of the people and intensity of distress. The reports of deputy collectors and tahsildars cannot, as a rule, be relied upon, as these officers very rarely have a very intimate knowledge of the existing condition of more than a few villages close to their head-quarters, overburdened with office-work as they must be in a state of famine. As the distress becomes more severe, the special establishments should be increased up to the limit already mentioned.

MYSORE.

Colonel Sankey.—For reply to first portion of this inquiry, please see answer to Query No. 36 (*supra*). As to the causes which have led to the exhibition of a determined disinclination on the part of a portion of the population to leave their villages and go to the relief-works or poor-houses, it must always be difficult for a European to pronounce in any but a hesitating manner as to the precise motives which have actuated the people in this respect. That the motives have been genuine may be inferred from the fact that on the issue depended life or death for themselves and their families. That the roots lie deep down in native society is equally clear, as the same tale of refusal to pollute themselves with camp or poor-houses comes from the North Western Provinces as from Madras and Mysore.

I confess that to me the thorough investigation of this point is the one of all others which claims the most anxious and humane consideration on the part of the Famine Commission. A woman who has lost both husband and child tells the Relief Officer in Mysore distinctly that she will kill herself and remaining children rather than submit to the degradation of the poor-house. A gaunt ryot tells an officer he casually meets in Bangalore, that he and his belongings have come a hundred miles from home without food, carefully avoiding all inquiry on the road, so as to escape being taken to one of these places. But the tales of this kind are innumerable, and, much as one may desire to do so, it seems difficult satisfactorily to dispose of the charge, practically so frequently preferred in the papers, that the relief-camp and poor-house stank in the nostrils of the respectable classes, who, nevertheless, like others, were perishing from hunger.

Major Moncrieff.—It is the duty of Government to search out distress in villages and homes. Special officers must be deputed for it Civilians are the best. Officers of experience in the police, in the survey, in the forest department will all be of value. Subalterns from line regiments have proved most admirable relief officers in the last famine, and have shown a readiness of resource, a judgment and an earnestness surprising when one considers their previous training. Above all it is most important that these officers should be what is commonly understood by the name *Gentlemen*, whether servants of Government or not. The best I found to be Government servants. The area to be given to each special relief officer will to some extent depend on the population and on the severity of the famine. Where it is bad, one officer should not have more than 500 square miles or 120,000 people under him. Separate provision must be made for large towns and municipalities. The relief officers should be directly under the orders of the collector or deputy commissioner. Whenever it appears evident that a famine must come on these relief officers should be organized. Government should then start a famine department, and there should be one or more special famine commissioners.

I believe the effect of long under feeding is to produce a great disinclination for any exertion, and a comparative indifference to death. Want of confidence in the officials and the inefficiency or insufficiency of the district officers I have known very much to aggravate these evils.

Mr. Ricketts.—It is the duty of Government to search out distress in time of famine in the villages and the peoples' homes. There should be strict house-to-house and village inspection in order not only to prevent death, but to watch narrowly all growing threatenings or symptoms of distress. The district staff of *village* shambogue, potail, and punchayet, *hobly* shambogue, *taluk* amildar and deputy or assistant commissioner would ordinarily suffice, save that the district officer at such a time should have additional help in extra assistants and European special relief officers, and in very distressed taluks additional ordinary relief officers should likewise be sent out, each to be in charge of two or three hoblies. These ordinary relief officers, either European, Eurasian, or Native, should be selected for their activity, respectability, and humanity. The choice would ordinarily fall upon Government officials, but occasionally equally good men and entertaining a proper sense of responsibility could be selected from the non-official public.

It would be expedient to organize such extra establishment at a very early period of the famine as whole tracts and villages sometimes suddenly and unexpectedly fall into the ranks of the distressed and starving.

There has been no disinclination on the part of the people to go to relief works, except when such works were at a distance. The mortality in a kitchen or poorhouse crowded with human beings in various stages of emaciation was of course great. Then the marshalling in of recipients and the doling out of cooked food was naturally repugnant to the feelings of many natives, and consequently the poorhouses were shunned by the majority of respectable people who preferred to die in their own houses, surrounded by their relatives and friends and to be buried by them, rather than go to a poorhouse and probably die there too, friendless and alone, and then be buried by strangers.

I do not see how habitual want of confidence in officials could have had anything to do with disinclination to seek relief, but physical prostration was undoubtedly a potent cause for such disinclination.

It has been stated that the *back-bone* of famine policy is the employment of all suitable applicants for relief on large works of permanent utility. In readily subscribing to the immense importance of spending money usefully and wisely and on suitable applicants, still I venture to think that the *back-bone* of famine policy should be "village inspection," and systematic village relief. The district officers, his assistants and special relief officers will have enough and more than enough to do in being constantly on the move in villages, watching the condition of the people and carrying out regular measures of relief on a preconcerted system.

After all it cannot be said that a famine is being conquered or even checked by the fact that a certain number of persons are relieved on large works. The hospitals on such works may be good, there may be perfect ganging, and in fact admirable arrangements of all kinds; yet excellent and indispensable as these arrangements may be, can they be said to be anything like sufficient when a short trip into the interior reveals (from whatever cause it may be) villages in all directions where there is much suffering, emaciation, and death. If the same attention had been paid to villages as to relief camps and works, the sum total of misery and mortality would have been far less than it is.

QUESTION 39.—EXPEDIENCY OR OTHERWISE OF STORAGE OF GRAIN BY GOVERNMENT.

Did you in the recent famine lay in any stores of Government grain for the purpose of feeding labourers or inmates of poor-houses? Was anything done to stimulate trade by offering advances of money or any kind of assistance or bonus to merchants? Did the Government purchase grain, import it, and sell it again to the general public with the object of keeping the local markets supplied? If any such measures were taken, state the circumstances under which the transactions occurred, the reasons which led you and your superior officers to think them necessary, the manner in which grain was purchased and imported, the quantity, cost, and price at which it was disposed of, and the monetary gain or loss realised, or the nature of the advance or bonus given to traders; whether it checked private imports; also the general effect of the whole transaction. If you did not take any such step, do you now consider that it would have been better to do so? If you did it, or it was done, do you think any error was committed in so acting? And, generally, what are the conditions under which such measures are proper and necessary?

Punjab and North-Western Provinces.—Generally the import of grain by Government is held objectionable, except in rare cases when trade fails. In Jarahal, Government grain was supplied to a small extent.

Bengal.—Opinion is unanimous that Government's right to import grain under the circumstances believed to exist in Tirhoot in 1873–4, or when trade will not supply the country. But otherwise, interference with trade is not approved, and it is anticipated that since the construction of the railway no such necessity can recur in Tirhoot.

Bombay.—Interference by Government with trade is objected to; but special cases are given when the purchase of a small quantity of grain was useful to put down combination or bring hoarded stocks into the market.

Madras.—Nineteen European and one Native gentlemen have replied.

Rice was imported by the Madras Government and stored in certain districts as a reserve. It was afterwards used on relief works and in poor-houses, and subsequently the remainder was sold. Some officers think a Government reserve was necessary, others that the trade did all that was wanted in their districts. A majority of opinions is that Government should not interfere except where trade is inoperative, and should never sell below the market rate.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—No Government grain was stored, neither was any grain purchased and imported or sold in this district by the Government. It would not have been better to have done so, as the local dealers were able to import all that was actually necessary, and sold at fair rates with regard to the prevailing high prices throughout the province.

If it is clear that in consequence of collusion among the local dealers the prices in any district are unduly enhanced as compared with the prices current in adjoining districts, then it would be desirable that Government should import and sell grain until the prices had reached their proper level.

Mr. Tracy.—The only conditions I can conceive under which such measures would be proper are analogous to those of Orissa, in 1866, or perhaps of Ajmere in 1868–69, that is to say, where the remoteness and inaccessibility of the tract of country, combined with want of capital and enterprise on the part of the trading class, render it improbable that the wants of the community will be supplied in the ordinary course of trade.

Colonel Fisher.—During the recent drought I did lay in stores of Government grain at certain points of the affected area. I stimulated trade by pointing out the localities where demand was brisk and certain, but when private trade began to show signs of exhaustion I opened the Government grain stores. This grain I had imported in the early stage of distress, and I sold it to the general public at cost price, plus carriage, when there was no grain procurable elsewhere. Grain was purchased in the district of Bijnor through local grain merchants. I bought at different times about Rs. 6,000-worth at prices ranging from 11¼ to 12 seers per rupee in the plains, and sold it plus the cost of carriage, which enhanced the prices to 10½ or 10¼ seers per rupee. On the whole, Government gained nothing. Private trade was not affected, because I did not sell as long as private imports went on. Had I not bought the grain the loss of life in February and March would have been very heavy, because in those months trade was exhausted and food in the hills was unprocurable. I don't consider any error was committed in buying the grain. In future, though, I would throw the responsibility of storage until required for use on the grain merchants.

BENGAL.

BENGAL.

Mr. Barlow.—During the operations of 1873–74 in Behar (including this division) Government imported and stored grain for the purpose of feeding labourers and inmates of poor-houses, &c. It was sold to the public at fixed rates, and also disposed of to local traders (buneahs) at a profit upon these rates, with a view of keeping the markets supplied.

The rules prescribed admitted of the advance of money (at 6 per cent. interest) to traders with a view to stimulate trade, but the plan was little resorted to. This circumstance may be attributed to the fact that the tracts concerned were outside the lines of ordinary import trade, and the mahajuns are slow to embark in new and uncertain enterprises. Importation by Government was decided upon because it was judged that the food-supply available would not meet the demands of the population. Bonus to traders was offered in the hope of stimulating trade and increasing the stocks; and sales by Government were finally made when food-supplies were short and bazaar rates nominal. The entire transactions connected with import were in the hands of Government, and local officers have no knowledge of the circumstances or result of the account. Mr. MacDonnell's work shows the total amount imported into this division to be 70,643 tons.* The sales to the public were effected

	Tons.
* Monghyr	8,158
Bhagulpore	26,318
Sonthal Pergunnahs	7,419
Purneah	24,802
Maldah	3,946
Total	70,643

at the rate of 12 seers per rupee, Bengal rice and Burmah rice cheaper.

I do not think the measures checked import by private individuals, because neither at the time nor beforehand were signs of such trade apparent. Apart from the question of whether the whole thing was or was not overdone (a fact which is and must remain uncertain) I think the general effect of the transactions was good.

Replying to the last clause of the question, I say that where the food supply is short, grain not procurable, and not coming in in sufficient quantities from outside, there all such measures are proper and necessary.

Colonel Burn—Yes; very large stores of Raj grain bought in Calcutta and the North-Western Provinces. I offered loans to merchants, but all declined. At an interview in Bankipore, when scarcity was only threatening, I obtained Sir George Campbell's sanction to lay in grain, and very soon had to multiply my orders. I bought it from merchants or agents, who shipped some in boats, but sent most by train to Monghyr and Barrh, whence I imported it in carts to Durbhunga, except for my requirements in East Allapore and Nareedigur, for which places my Monghyr agent sent up large quantities up the rivers as far as boats could go, and from thence I carted it to my relief circles.

	Mds.	Srs.
Quantity - -	2,76,408	18
	Rs.	a. p.
Cost - - -	20,12,794	11 3½
Price disposed of -	9,67,429	9 0
Loss - - -	10,45,365	2 3½

Private imports were nearly nil till towards the end of the famine. Those who had grain in store actually withheld their grain, hoping for higher prices. Export of food-grain was the normal condition of private trade here, and it was because it was so evident that no imports would be made privately that Government and this estate acted as we did. Most assuredly no error was committed in the mere importing grain. I suppose, if this estate had been unable to do so, Government would have had to do it for us; but if we had been left to our own resources, and had not imported grain, no remissions, no money grants, would have staved off frightful mortality by starvation. Adherence to the standard rules of political economy would have proved disastrous here. But hereafter, as I have before stated, if our State railway be extended and if greater facilities for crossing the Ganges are provided, I believe grain merchants, if told Government will not compete, will be able to, and will, import largely; and the very fact that such facilities for transit are available will unearth the hidden stores of grain in the district. I write unearth literally, for all such stores are buried.

Mr. Worsley.—Stores of grain were laid in by Government in 1874; advances of money at 6 per cent. interest were offered to grain traders by way of stimulating trade, but few advances were taken. I believe that the original object of the Government in purchasing and importing grain was to supply it to labourers on relief works, and to sell it at cost price in localities where grain was deficient. Eventually the grain was sold to the general public at comparatively easy rates.

The importation of grain by the Government was considered necessary in consequence of the supposed inability of local grain traders to import grain to the requisite extent, and of their unwillingness to import at all. It was also feared that the grain dealers, if left to themselves, would greatly aggravate the famine by raising prices unnecessarily high. Under the circumstances of Tirhoot in 1874, the general principle of thus importing grain was, I still believe, a proper measure; but with regard to the quantity imported, the rates paid for transport, and the varying price at which the grain was sold from time to time, some errors, I think, were committed Now that there is a railway from the Ganges to Mozufferpore, and excellent and numerous district roads, and the local traders have got well accustomed to importing grain, I would not consider importations by the Government to be under any circumstances proper or necessary.

Mr. Hodgkinson.—The stores of Government grain laid in by the collector of Sarun in 1874 amounted to 10,98,939 maunds. Besides this, about 1,70,000 maunds were imported for the Hutwah Estate. Advances were given to zemindars and others for the purchase of grain, but not, I believe, to merchants as such. Government imported and stored the grain; sold it at relief works for a price below the market rate; and made large grain advances, of which the estimated value aggregated Rs. 14,26,971-3-11, also at a price below the market rate. The loss to Government cannot be estimated here. I append the figures of the last "famine advance" report to Government.

Total advanced.		Outstanding on 1st January 1878.		Amount since recovered.		Amount since written off.		Amount outstanding on 1st July 1878.	
Cash	Grain.	In Cash.	In Grain.	In Cash.	In Grain.	In Cash.	In Grain.	In Cash.	In Grain.
Rs A. P	Rs. A P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
6,01,961 10 0	14,28,491 0 11	38,223 13 1	74,357 14 9	1,905 0 3	5,727 8 6	1,890 12 1	—	35,838 0 9	68,634 6 4

I am unable to explain the circumstances which were considered to necessitate the course taken. Importations by Government for relief work expenditure and charity were necessary and wise, I fully believe. But the estimates were excessive in the first instance, and even they were exceeded owing to the means taken to dispose of the grain—means which, in my opinion, were so repugnant to the first principles of political economy and policy that no circumstance could justify them.

Mr. Finucane.—As I have stated in my reply to question 4, chapter II., Government imported grain to Dinagepore in large quantities because the local traders positively refused to import. They alleged that, all their arrangements being made with a view to exportation, they had neither the time nor the inclination to make entirely new arrangements. Moreover, prices were nearly as high in the districts from which supplies could be obtained as they were in Dinagepore. Government advances were offered to mahajuns for the purpose of importation. They scouted the idea of their requiring advances. The reasons, then, which led the superior authorities to think importation on the part of Government necessary were, *first*, that it was known the supply of food in the district would not suffice for local consumption; *second*, that private traders refused to do anything towards supplying the deficit. The importation of Government grain did not interfere with private trade in that part of Dinagepore with which I am acquainted, because there really was no private trade to interfere with. As I have stated in my reply to question No. 4, chapter II., the (mahajuns) local merchants were themselves the first to urge the necessity of opening Government golahs for the sale of grain to the public. I consider the

effect of Government importation into Dinagepore was the preservation of the lives of thousands of the population. Had there been no such importations, the supply of food-grain in the local hâts would have failed (as it did fail) by the end of March; panic would have ensued, and the results would have been most disastrous. Private trade would probably have then begun to do something; but meanwhile numbers would have starved. I do not think any error was committed in importing stores of Government grain to Dinagepore. The collector's estimate of the district requirements on 9th February 1874 was eight lakhs of maunds: ten lakhs were imported. I think the eight lakhs would have sufficed; and that the importation of the extra two lakhs was the only mistake connected with the transaction. I would not, however, be prepared to say that Government importation on anything like the same scale would be necessary on the re-occurrence of a similar scarcity. The facilities for importation afforded by the Northern Bengal State Railway would possibly now induce private traders to act. Mr. MacDonnell (whose knowledge of Durbhunga trade is well known) estimates the deficit of the food-supply of Madhubani subdivision for the year 1875–76 at 29,000 tons, or 4,06,000 maunds, and he apprehended that private trade would not be able to supply the deficiency. The import traffic statistics of that year indicated, I believe, that Mr. MacDonnell's estimate of the food deficit was correct; but experience proved that private trade was equal to the task of importing what was required, and this though the tract affected by drought was the most inaccessible in Behar. I consider the importation and sale of grain on part of Government necessary and proper, *first* where it is known that there is a deficit of food-supply, and that private is unable to supply that deficit; *second*, where local traders combine to stop sales and run up prices by fictitious means.

Mr. Kirkwood.—This question seems to have special reference to the recent famine in Southern India. I would, however, here deal with such details concerning the importation of grain as might fall more appropriately into an answer to this question than in reply to question 33.

The circumstances under which such importation by Government took place in Cuttack (1867) and in Behar (1874) are too well known to need recapitulation. The Government then purchased grain, imported it, and sold it again to the general public. Supplies for labourers, inmates of poor-houses, and those relieved gratuitously or by spinning in their villages were also drawn from these Government stores. Large grain advances were likewise made to ryots for their support.

In some few cases in Bhagulpore cash advances were made to local traders for the purpose of inducing them to import grain; but the extent to which this measure operated was very small. The circumstances under which Government importations should generally take place, first of all for the out-of-the-way parts and subsequently perhaps for parts nearer trade centres, are that over a considerable number of adjoining districts there is an assured failure of crops, which, together with exportation or previous depletion of stocks, has left less than half the ordinary available stocks for consumption. If the defect is only one-half, small stores in out-of-the-way parts may suffice; if the defect increases to three-fourths, much more extensive importation operations will be necessary. Strict vigilance is especially desirable in this matter in the case of districts or portions of districts which are purely agricultural and which ordinarily export.

In Bhagalpore the Government sale rate for clean rice was first of all at the end of March 20lb. per rupee, it was then in May (I think) lowered to 24lb., and in July to 26lb. There was much rice mixed with dhan (or unhusked rice), which was sold at 24lb., 30lb., and 32lb., the price of this partly uncleaned rice varying in accordance with the changes in the rate for clean rice. Up to the end of June we allowed selected local traders (who were carefully selected by the circle officer, and were ready to submit to official inspection and regulation) on their purchasing ten maunds or more at a time, a discount of three per cent. on their purchases, they binding themselves to sell their purchasers by retail at no rate dearer than that current at the Government store. This worked well. The traders were quite satisfied, and so were the people. The traders found it very profitable, as they had shops in the bazaars close to the Government store-houses. They each easily sold their ten maunds per diem, which meant a profit of one rupee on this head of their dealings alone. Besides which, purchasers coming for rice bought other articles also. The people found it very convenient, because they could go at any time in the day to purchase, and could purchase in smaller quantities than at the Government store. For at the Government store only whole rupee retail sales were allowed, and by mid-day the store was generally closed for sale to allow of other operations being conducted, such as inspecting the state of the stores, making up the accounts, making issues for poor-houses, labourers, or gratuitous relief, despatching grain to cotton stores or to other sale stores whose stock may be running short, weighing the bags in detail (recording the weight of each bag, and noting that weight on a list as well as on the bag) in readiness for the next morning's sales, which began at daybreak.

But early in July, unnecessarily and undesirably I think, the discount given to these local traders was immensely increased under orders from Government. The Government store retail prices were at the same time lowered from 24 to 26lb. of clean rice, and from 30lb. to 32lb. for half-cleaned rice. The dealers were then allowed to purchase at 32lb. clean rice and 40lb. partially cleaned rice. I think both these measures were very undesirable, and was never able to understand their object. If it was surmised that Government had over-done its importations, and it was considered an object to stimulate sales, that object could not have been thereby secured. There was already a full demand for Government grain. The practical result was that the total sale issues for any month were not increased, less was realised, and another shift in the retail price of grain was shortly made. For the dealers then began to compete for purchasers who might enable them to pocket these heavy profits, and therefore reduced the retail price to 28lb. of clean rice and 34lb. of half-cleaned rice per rupee. This measure naturally, to a great extent, closed retail sales at the Government stores, where the retail price was 26lb. of clean and 32lb. of half-cleaned rice.

I think that all these changes in the selling price of Government grain were a great mistake, seriously blemished the excellent measure of Government importations and sales, and must have been calculated to place a very great check on private importations. My recommendation is, as I have said in answer to question 33, that the Government sales should be at one fixed rate, fixed for each district before the stores are thrown open, publicly notified, and adhered to steadfastly to the end of the famine. That fixed rate should be about treble the ordinary rate; it should rarely, if ever, be dearer than 18lb. per rupee for the grain in common use, or cheaper than 24lb. per rupee. From the Government store no sales more retail than those of a whole rupee-worth should take place. For the more retail sales village dealers (as in Bhagalpore) should be entertained, who should receive a discount of about three per cent. This may either be managed by allowing them to sell at one lb. per rupee dearer than the Government store retail sale price, or (which I prefer) making them retail at the Government store retail price and giving them a discount on their purchases. In order to cover the cost of carriage, moodies whose shops lie at a distance greater than one mile from the Government store on which they draw should receive a discount of five per cent., and those

at a greater distance than five miles should receive seven per cent. discount. Some arrangement, much as this, was in force in Bhagalpore.

I must admit that I do not see why well-managed Government importations, upon such a plan and with such objects as I have recommended, should clash with private trade, or why private trade should not be able to exist and flourish at the same time as Government makes the necessary provision for remote tracts, into which it is certain, or at all events the chances are very many, that private trade will never venture on anything like a scale adequate to the support of the people. I think the case of Behar (1874) supports my view. Private trade had there some unnecessary difficulties to contend with. Government importations were, it may safely be said, excessive. Sir George Campbell was in favour of a smaller estimate, and I think he was right. Railway carriage was thus unnecessarily absorbed by Government despatches. The Government rates for land carriage were very generally excessive, and private traders must have felt it hard upon their profits to have to pay similar rates. Prices, too, at which Government sold were changed from time to time in a manner that must have been discouraging to private trade. Nevertheless, early in May 1874, the Government of India reported that private trade was pouring into the distressed districts 50,000 tons of grain per mensem, most of which was drawn from the Punjab and Upper Doab. This was by one line of railway, aided by the river Ganges. Into Madras and Mysore, with four railways at work from other parts of India, and from the seaboard, up to the end of August 1877, the private importations (there being no Government importations) did not exceed an average of 2,200 tons per diem, or 66,000 tons per mensem; this includes all the grain landed on a long stretch of coast and conveyed into the interior by railway, but not that conveyed into the interior by cart or canal. Bombay Presidency was, for the same time, receiving about 1,000 tons daily. Bengal, Burmah, and Scinde were mostly sending their contributions by sea, the North-West Provinces, Punjab, and Central India by land.

It is evident that at the commencement of the Behar famine (1874) there was great reluctance felt by Government to undertaking to sell grain in the distressed tracts. That course was by no means the declared policy of Government at the first start; but, fortunately for the population of Behar, that course was adopted before it was too late.

Mr. Magrath.—All the grain was Government grain in Mudhoobunnee. Advances elsewhere were made to merchants, but we had only Government-purchased grain, and laid it up in depôts at sites fixed by me, to keep the people. I was called on for an estimate. From inquiries and the census tables I estimated the number of people we should have to keep, and for how long, and at the ration above mentioned per head. I estimated at first for 12 lakhs of maunds, which, in the expectation of a prolongation of the famine till the next year, I subsequently increased to 16 lakhs, of which, roughly speaking, taking wastage, damage in transport, &c., 15 lakhs were received. Up to the time I left, in the end of October, something over 12 lakhs had been consumed. The grain was first sold at 10 seers, subsequently lowered to 12 seers, and then, about the time the people went home, to 14 to 15 seers per rupee. Petty traders were always allowed a margin for profit. The purchase of grain was done by the Government of India, and its transport by the Government of Bengal, and thus I have no data for the cost. Some, but not more than 2¼ lakhs, was given out as advances repayable, which in Mudhoobunnee, being carefully given, was almost all subsequently recovered. Mudhoobunnee, having no importers, could have been kept going no other way. The only great loss which Government made was in selling off the surplus grain by auction. Had Government either held the grain till the next hot weather, or exported to Assam or the Mauritius, the loss would have been comparatively small; but the principle adopted was held to be the best, looking at private trade, which rightly or wrongly was supposed to be kept in suspense by the action of Government. If importers can and will do the necessary importations, all that is required is pecuniary advances to them, repayable. But where there are no importers, or where they will not import, Government must step in, or starvation of the masses will ensue.

Mr. Abbott.—Government supplied grain, and also advanced zemindars and planters funds to purchase and retail it at rates somewhat beneath bazaar prices; the throwing of these large supplies into the country prevented the bunneahs hoarding theirs, and acted as a most effectual stopgap to distress, which, but for this action, would most certainly have half depopulated the district.

Mr. Whinfield.—367,399 maunds of grain were imported into the district of Burdwan by Government in 1874. What the exact cost was I cannot say, but I have seen it stated that, with cost of carriage, &c., it was about 9 seers per rupee. This large import by Government led to a still larger amount being exported by private merchants. But as the price ruling in Calcutta was something like 10 seers per rupee, much of this would have been exported in the early part of the year in any case. And I firmly believe that, if Government had not imported grain, prices in Burdwan would have run up to 7 seers per rupee; for it must be remembered there were fears that the crop of 1874 would fail like that of 1873.

Mr. Lowis.—As I have mentioned in an earlier part of this paper, I did urge on Government the necessity of importing grain. From personal inquiry and otherwise, I satisfied myself that there had been gathered only one-eighth of the usual crop. Adding this amount to the stock supposed to be in the district, I compared the result with the total consumption of the population, and found that there would be a deficiency of above 800,000 maunds, which would have to be met by importation. The next thing was to ascertain if timely steps were being taken to import; for, from the want of communication, I heard it would not be an easy matter to bring in as much grain as would be required. Government had offered to help, by advances, any person desirous of importing rice, but no one applied for help for this purpose. I personally inquired from some of the principal zemindars what they intended to do, and learnt that they intended to do nothing. I inquired from the traders' agents at the bunder, but found that, as there was no prospect of there being any rice for purchasers, few were present, and the few there were said their masters were not going to import, as the trouble, risk, and expense was great; and there was also an impression that the ryots had stocks beyond what was supposed. Meanwhile, prices continued to rise, and I at once reported the facts, and began making arrangements to bring in rice; fixed on central positions for golahs; and, in fact, prepared for the emergency that was evidently approaching. Government accepted my statements and figures, and rice began to be imported, though not a day too soon. There was not a great deal of rice in stock, and what there was speedily made its appearance in the market, and was at once bought at high rates. I declined to sell Government rice as long as the market continued to be fairly supplied at 8 or 10 seers per rupee; but when it became dearer and scarcely procurable, except as prohibitory rates, then the golahs were opened, and the dealers supplied with grain, which they were bound to resell within certain limits as to price. Most of the rice supplied to us was Burmah rice, which is very distasteful to a Bengali, and our sales to the paikars or dealers at 12 seers per rupee did not prevent as much country rice as came into the market being sold at 8 seers per rupee. Our

Government sales in no way checked what private trade there was; for, as I have said, our Burmah rice was not in favour, and did not drive any country rice there was out of the market. The circle officers were specially warned to watch the market; and whenever it became easier, and became more abundant and cheap, Government sales were at once stopped, except to our relief labourers. Government rice was never sold to the public unless it was apparent to the circle officer on the spot that there was no other means of supplying the market. When once prices rose above Rs. 4 per maund it was quite clear that there was very little grain in hand with the ryots; but it would have been then impossible to throw large supplies into the districts unless expensive arrangements had been made beforehand, and no such arrangements had been contemplated by any trader. If, therefore, Government had not been prepared to supply the market, there would very soon have been no grain procurable, except at absolutely prohibitive rates, and nothing could have averted a great calamity. The people were dependent on their rice crop alone, there being no cold-weather crop whatever to fall back on; the rice crop had failed, and there was no food in the country, except such as could be imported. The traders allowed time to pass without attempting to supply the deficiency. It was most fortunate, therefore, that the Government supply was on the spot, and it was an unmixed boon to the people that they were allowed to purchase from the Government golahs. It taxed all the resources of Government taking timely precautions to throw sufficient supplies into the district, and but for these precautions there would not have been food enough for the people. I have myself seen the paikars quarrelling who should first secure portion of a newly arrived convoy of rice, which they got at 12 seers per rupee or 3-8 per maund; and yet the very same sort of rice (Burmah), when we came to sell off our remaining stores, the end of 1874, could hardly be got rid of at four annas per maund. A fact like this proves more than any argument could the reality of the scarcity of food: a scarcity which could not have been supplied by the trade, when the traders answered to the necessity of the case by rates running up to Rs. 4 per maund.

BOMBAY.

BOMBAY.

Mr. Propert.—I have before stated that during the late scarcity, as regards Khandesh, Government did not actually lay in grain under any circumstances, but I obtained a loan from Government to assist municipalities in providing food, not gratuitously, but for sale at cost price. Direct Government interference I object to, unless under very special circumstances, when it may be found that the grain dealers are carrying combination to raise prices too far, but I strongly approve of municipal bodies and charitable committees using every fair means in their power to check the institution of prohibitive prices, before the actual absence of grain in a district warrants the introduction of such prices. Taking the case of my own district, I am convinced and have been repeatedly assured that the establishment of (comparatively speaking) cheap grain shops in the principal towns tended very considerably to keep down the general market rates. The municipalities and charitable committees of Khandesh imported grain from the other side of India during many months, until waggons could not be procured for its conveyance.

Mr. Spry.—Lbs. 246,000 of jowari were imported into the district by Government from Belgaum and Sholapur under the following circumstances. In November 1876, when all hopes of rain had passed and the people began to realise the fact of famine staring them in the face, a combination or panic took place amongst the grain holders in the district. These grain holders are not as a rule merchants in towns, but people living in surrounding villages who on bazaar days bring their stores into the towns for sale. All at once these supplies ceased to come. The bazaar used to be opened with scarcely any grain for sale, and none could at times be got for any money. This was not from any scantiness in the stores, for in fact the stocks in the country were enormous, but simply because their owners would not bring them forward. The district, too, is so isolated that there was no hope of outside speculators being induced to send their grain so far when more accessible markets were at hand. Things at last came to such a pass that at the headquarter station there was the greatest difficulty in getting at any price food for the prisoners in jail, the military, and the police, let alone the general public. The revenue officers had to employ their time going day after day from village to village trying to persuade the grain owners (themselves cultivators) to open up their stores, but with little effect. Some works which were opened for employment of labourers had to be closed because no grain could be got to feed the people. Other works, ready for commencement, could not be opened for fear of attracting large bodies of people for whom no provision could be made. These circumstances were reported to Government, under whose instructions the grain owners were warned that continued combination would only lead to importation of grain. These warnings had not the slighest effect. Grain never had been imported into the district, and the people would not believe it till they saw it. Government then sent the above grain into the district "to "serve as a reserve in the case of failure on the part "of any local dealers or contractors who may have "engaged to supply people employed on relief works."

The effect of the presence of the grain was instantaneous and wonderful; stocks were at once produced and the supplies were sufficient throughout the collectorate, so that there was no necessity for utilising the grain as at first intended. The importation of this grain had another good effect. Before that, such a thing as private importation was unknown; but seeing the facility with which it was brought, local traders commenced importation on their own account to a large extent.

The presence of the Government grain in this district, although not utilised, had a wholesome effect on the prices. A portion of it was stored at Kaladgi, but, getting damaged, was sold by public auction. No sooner did the check of its presence disappear but the bazaar rates mounted up from 18 lbs. to 14 lbs. per rupee, and continued abnormally high. The remainder of the grain was subsequently used up in relief houses.

The above grain, including cost of carriage, &c., cost Rs. 22,898, and in consequence of some of it getting damaged a net loss of about Rs. 2,600 was incurred, but the good it did outweighed all money considerations.

As I have said above, the villagers are the grain holders. They bring their stocks to market and dispose of them through dalals, or commission agents. In order to stimulate competition, Government placed Rs. 20,000 at my disposal to give out as advances for the purchase of grain to such as would undertake to import it and to sell it at a certain rate above cost price, plus cost of carriage. I tried to get these dalals to take these advances, and some few did, but the project was not a success.

I wish it to be distinctly understood that I am an advocate for free trade; but after the personal experience I had, as narrated above, I think that under certain conditions it is obligatory on Government to import grain for the protection of the people against local

Ch. III. Qs. 39.

BOMBAY.

combinations which competition from outside cannot reach.

Mr. Charles.—No stores of Government grain were laid in for the purpose of feeding labourers or inmates of poor-houses, nor were advances offered to merchants.

I do not think that anything of the kind should have been done, except that it might have caused a saving to Government if jowari for the poor-houses had been bought in the early months of the famine before the price rose very high, instead of buying it as required at the later and dearer rates.

Mr. Moore.—(1.) No. (2.) We gave merchants Treasury orders on Bombay and other large towns at par, thus relieving them from the payment of exchange and the cost of stamps. (3.) At the commencement of the scarcity, when the banias virtually closed their shops, when money could not buy grain in the villages, when no effort at importation by the traders was made, I did buy some grain on the part of Government, but I desisted afterwards because it was against the views which Government wished to carry out. (4.) The total sum advanced for the purchase of grain was Rupees 8,560-3-11. Of this, Rs. 8,216-1-4 were credited to Government by the sale of the unconsumed grain, and the deficit of Rs. 344-2-7 was debited to the relief operations. The arrangement did not check trade, on the contrary it had a most favourable effect. Directly the traders saw that Government were importing and selling grain they were afraid that they would be undersold, so they re-opened their shops and began to import, for they saw that if they did not do so, Government would. (5.) I consider the step I took perfectly justifiable under the circumstances; indeed, I know not what else could have been done. (6.) I think it was not an error. (7.) When private enterprise ceases or is wanting, when grain is not procurable to those who want to buy, then Government should import grain, but not otherwise.

MADRAS.

MADRAS.

Sir W. R. Robinson.—I have no doubt that a very serious mistake was made in respect to the management of the late famine by the reversal of the policy acted on by the Government of India and Her Majesty's Government in respect to the importation of food-grain in 1873-74. The functions of Government in respect to averting starvation cannot be relegated to a local trading community and left to an impossible market—a market which cannot stoop to the platform of life in India with which a famine administration has most to do. The trade which can feed the classes who can pay must of course be briskly and earnestly encouraged—and it will not be discouraged by losing the nominal supply of a class that cannot buy its substitutes for their ordinary sustenance.

Mr. Longley.—No stores of Government grain were ever laid in for any purpose whatever in the Salem district.

No stimulus of any kind was offered to private trade in grain.

No purchases of grain were made by Government with the purpose of keeping the local market supplied. Private trade was *active* throughout.

I do not consider that under the circumstances of the activity in private trade it would have been advisable to do so.

Mr. McC. Webster.—In this district stores of Government grain were not laid in generally. In July 1877, however, owing to the closing of the ports on the west coast by the south-west monsoon, it was anticipated that there would be a difficulty in importing sufficient rail borne grain into the district from the eastward, and arrangements were made to import and store enough grain for one month's consumption of the relief-houses. One hundred and eighty tons of rice were thus stored and were used as occasion required.

No advance of money or other kind of assistance was made to merchants in this district. I do not consider now that it would have been better if such had been done. The supply of grain, I consider, ought to be left entirely to private enterprise when it is sufficient. In this district I consider it quite sufficient. Government, in my opinion, should interfere only when private enterprise is not sufficient. In any other case they only disturb the ordinary course of trade. By making advances they increase the amount of money to be spent in buying grain, and thus increase the price of the grain when it really does not indicate deficiency of supply.

If private merchants unaided were insufficient to meet the demand then I consider it might be proper and necessary for Government to make advances with the view to encourage imports. It should be done, however, with care. It would generally, I consider, have a tendency to raise prices unnecessarily.

Mr. Price.—There was nothing of the kind in this district; grain was supplied, when required, for poor-houses. In Cuddapah a large quantity of rice was purchased and sent up by Government; I cannot remember the quantity. I believe it was something like 6,000 tons. This was stored as a reserve and was not, for a very considerable period, used either for coolies or poor-house inmates. The object of Government was, I believe, to have in hand in the most inaccessible and distressed portions of the district a stock of rice which would meet any sudden emergency, and it was accordingly not used, excepting once, I believe, when there was difficulty in regard to food for coolies on the works, until towards the close of the distress, when, to get rid of it, it was served out to the coolies on works, the paupers in poor-houses, in some few places to those on village relief, and, still later on, it was sold by auction and retail at a slight reduction below the market-rate to the general public. The only inducement held out by Government to private traders was, I believe, their allowing them to cart grain to markets in the interior at contract transit rates, Government being at the time virtually in possession of nearly the whole of the disposable wheeled carriage of the ceded districts. I do not think that the merchants availed themselves, to any considerable extent, of the assistance offered. The larger men sold at the stations where there were railways, and left purchasers to carry away the grain for themselves, and the smaller merchants were imbued with the feeling, which was then very prevalent, that Government were importing the grain in order to swamp the traders and snatch away their profits. The Government sold their grain in order to get rid of it, as it was no longer required. The information as to prices, &c., I cannot furnish. My successor in Cuddapah will no doubt give these; I can however speak of the general effect of the transaction. I have no doubt that the simple fact of Government having stored such a large quantity of grain, as they did, at points distant from the rail, prevented the petty merchants running up prices much more than they would otherwise have done. At the same time the large importers would not bring rice into those parts of the country where Government had stores for, as they said, "We cannot tell what the next move of Government may be, when they may not change their policy, or when they may not suddenly determine to throw their rice into the market and swamp us." I consider that Government began to dispose of the rice too late. I would have done so earlier. I think that it was a mistake to hold so long as was

done. I believe that the principle acted upon was right enough and that the measure had, generally speaking, a good effect. Had it not been for the knowledge amongst the traders that Government had a reserve of rice which, if the merchants ran prices up to extreme famine figures, would be used, I believe that rice would have sold for half a rupee, if not more, a local measure (132 tolahs). I cannot say whether, if I had to deal with another bad time, I would lay in a stock of rice. I was never asked for any opinion by Government and have never had time, since I began famine work, to think the subject over.

Mr. Grose.—The following purchases of grain were made in this district:—Paddy 110 tons at Rupees 8,851, rice 1,909 tons at Rupees 3,13,049, cholum 137 tons at Rupees 18,195. Besides this about 5,508 tons of rice, costing Rupees 6,89,416, were imported from Madras. The chief items of expenditure were—

	Tons.	Costing. RS.
Sent to taluks for relief purposes - - -	1,976	3,29,862
Do. Cumbum in Kurnool - - - -	2,403	3,04,398
Delivered to Department of Public Works for use on their works -	2,558	2,95,694
Sold by retail after the famine - - -	572	64,055

At the beginning of the famine stocks on hand were believed to be small, partly because there had been bad seasons before, and partly because prices were so high that they seemed only accountable for on this hypothesis, and there was such a rapid export to the ceded districts that the then collector was led to fear that an insufficient quantity would be left. Afterwards there was a scarcity in Kurnool, and Government caused grain to be landed in Nellore for that district, and there was an enormous number of workmen on the Buckingham Canal where the markets are few and small, and grain was required for them; and when the south-west monsoon failed, the stocks which had not been replenished having been further depleted, importation by sea having almost stopped because of the prevailing winds, whilst the relief-camps were filling rapidly, I considered it necessary to purchase rice for the camps. At this time, too, I expected scarcity of grain to be felt in several outlying portions of the district, but we were saved from this no doubt by unrecorded importations by road and canal.

No attempt was made to import rice for the sake of selling it at less than the market-rate, or to induce merchants to import by bonuses. High prices were a sufficient inducement to them as long as the weather, &c., was suitable for importation.

It is only when private importation is unequal or likely to be unequal to the supply of the people that Government should import, and even then they should not sell below the proper market-rate.

Mr. J. G. Horsfall.—Grain was purchased in the local markets and delivered to the Public Works Department for the people employed under them. This was done to a very limited extent only.

Clauses 2 and 3.—No; Mr. Sewell gives the following account of the only instance that occurred in the head assistant's division:—

At the beginning of the famine, when the prices became abnormally high, the lower orders in the towns became riotous, broke into grain-shops, and looted the merchants. They behaved in so threatening a manner that they prevented the merchants from sending their goods out of the town, because they had a foolish mistaken idea that the merchants were going to sell off all the grain in the town to other people and were not going to get in any on return. The mob therefore determined to prevent the exportation of grain thinking that they would then be well supplied. The great centres of trade about this part of the country are Ellore (Godavari), Bezwada, Masulipatam, and Jaggayyapet. In all these towns disturbances occurred. In Ellore and Masulipatam loots took place. In Bezwada and Jaggayyapet the merchants were threatened and dared not send loaded carts off the towns. This block lasted some weeks. In consequence of this the merchants in the villages had no means of restocking their small stores, and when their stock was sold shut up their shops. The villagers were for a few days in the greatest distress, and I met people constantly who held up to me silver coins and declared that they could not buy grain. This really was the case. Moreover, the ryots who had stores of grain of their own were so afraid of being looted that they absolutely refused to part with even a single seer fearing that in the excited condition of the populace the mere display of grain might lead to their whole stores being looted. This was no unfounded fear. At that time the country was in a ferment of terror at the prospect of the scarcity before them and of rage at the behaviour of the grain-owners in raising prices. This rapidly quieted, and the prevailing tone throughout the famine has been one of silent despairing acquiescence in the decrees of fate. Then things were very different. General popular excitement was the characteristic of the time and loots of bazaars in the towns and dacoities on ryots' stores in the country, absolutely locked up all the trade of the district, so that the people of the villages were starving with money in their hands. Just at this time I sent out all the revenue inspectors of my division with instructions to travel at once through all their villages and ascertain the stores of grain in each village within a week. The returns I received were so startling in their nature that I conceived it my duty to ask for a Government stock of grain to sell to the villagers at market-rates. All the markets opened again. The returns I received showed that there was only about three days' food-supply in the whole of the taluks. I did not give absolute credence to this, but I dared not treat the matter with contempt. I had received the information direct from the villages, and I could not myself say that it was positively false. I accordingly telegraphed to the collector to send up grain from Masulipatam by canal. He did send up twenty candies which was sent on to Nandigama and put in charge of the tahsildar. But it happened that simultaneously with the despatch of the grain from Masulipatam the Ellore market reopened and next the Bezwada market, and the village Banians who had been waiting in the bazaar trying in vain to induce the large merchants to give supplies found themselves in a position to obtain supplies. They accordingly at once brought stocks of grain, and, with the utmost expedition, resorted to their own villages and sold it freely: consequently when the twenty candies of grain reached Nandigama the village bazaars were again in full swing and the supply was not wanted. It was subsequently sold at the market-rates to the work-people employed on the Hyderabad road.

In another case the general deputy collector was authorized by the Hon. D. Arbuthnott to purchase 8,000 rupees' worth of grain and forward it to Kurnool. The effect was that merchants learning this went in for heavy purchases themselves, and the prices rose tremendously in the course of a week.

It is only in a case like that instanced by Mr. Sewell that Government should go into the market at all.

Mr. Martin.—There was no interference with the trade of the sort alluded to in this question, nor do I consider that it would have been better to have done so.

I communicated to the trade freely my ideas of what would be required in the way of supply for the markets, and I ascertained that they would appoint agents for the distant markets. The supply was managed satisfactorily, but occasionally caused me considerable anxiety.

If I had the establishment that I advocate to represent the exact state of the markets in time and to see that substantial traders actually brought a sufficient supply each market-day, I should have been happier, for I knew that the railway was bringing in nearly enough for current wants, and the stocks and imports by other routes formed an ample supplement to the railway supply.

Mr. Lewis Moore.—Government did not in the Trichinopoly district during the late famine lay in stores of grain for any purpose. I consider that it would most decidedly not have been advisable to do so. Trichinopoly is a district remarkably well provided with roads, and is also traversed by the South Indian Railway in two directions. Under these circumstances I think that it will be found that private trade will always be able to do all that the district will require in the way of procuring the required supply of grain, and that Government interference will never be found to be necessary.

Mr. Fawcett.—Stores of Government grain were laid in in this division for the purpose of feeding laborers and inmates of poor-houses.

None was stored up for any other purpose. No advances were made to merchants to stimulate trade.

The grain was all imported by my predecessor Mr. Farmer. The reason why it was imported was that there was no grain in the markets for the coolies to buy, and private trade was not sufficiently active to supply the deficiency.

The total quantity of grain imported into this division was 8,657 tons; of this 4,411 tons were got through the Government agent, and the remainder, 4,246 tons, through local merchants on contract. The total cost of the grain imported was Rupees 13,54,714. Of the grain imported 6,635 tons were used on works and in poor-house, and 1,422 tons were sold for Rupees 1,30,976. The balance, 600 tons, was destroyed by damp or otherwise or stolen.

This importation only checked imports to this extent, that all the biggest of the local merchants had as much as they could do for some months to fulfil their contract with Government and had no time to import any grain on their own account.

On the whole I think importing grain in large quantities for the purpose of feeding people should never be resorted to except in places which, like this, are far from any market and where private trade cannot be depended on. Even here I think it a wasteful system, and consider that it would be a far better plan to enter into contracts with local merchants, giving them advances if necessary, for the supply of as much grain as was wanted at certain rates at certain places. This system, too, besides saving Government the risk of loss by theft or damage, would have the benefit of requiring no special establishment, whereas the grain establishment here cost Rupees 228 a month.

Mr. H. T. Ross.—In the recent famine 3,862 tons of grain were forwarded by Government (through their grain agent) to Penukonda taluk, where also 167 tons locally purchased were stored. In Hindupur taluk 1,008 tons locally purchased and in Madaksira taluk 999 tons locally purchased were also stored. The origin of these transactions, as recorded in the orders of the Board of Revenue, of Government, and of Mr. Thornhill, to whom the grain operations in this district were at first entrusted, was (1), the resolution to pay grain-wages on works and to distribute grain to the recipients of gratuitous relief, and (2), the desirability of forming a small reserve in case of any temporary failure of supplies in the markets of a division so far from the railways as mine. For this latter purpose a comparatively small quantity, say, 500 tons, was sufficient, and the remainder of these large stores constituted the quantity which it was originally intended to expend in the feeding of laborers and those gratuitously relieved. Had this original intention been adhered to, the whole of the grain (barring a reserve of, say, 500 tons) would have been utilized during the famine, and the financial loss which has resulted from abandoning this original intention would never have occurred. But hardly had the stores been formed when the policy of paying grain wages was cancelled, the whole quantity supplied by Government was said to be a reserve, and the result was that, while lakhs of cash were being spent on the very purposes for which the grain was originally stored, an unnecessarily enormous reserve was lying useless in the local depôts. When the relief operations were practically over and Government considered it to be the right time to begin getting rid of these stores, viz., in December 1877, there were on hand 2,732 tons of grain to be sold; of this quantity 826 tons, which cost Rupees 1,14,054-5-5, have been sold up to 1st July 1878 for Rupees 98,139-6-7. There has thus been a monetary loss so far of Rupees 15,914-14-10 as the result of changing the whole store from its original character to that of a reserve, and of deferring the sales (when it had been determined not to distribute the grain in wages and rations) until so late a period as December 1877, against my most earnest representations based on a local knowledge of the local markets. It is a moderate estimate that the transaction in these respects will cost the State at least a further half lakh of rupees before the remaining grain is disposed of, without taking into consideration the heavy expenses of keeping up stores and establishments over so long a period, all of which would have been avoided had the grain, as originally intended, been disbursed in wages and rations, or had the sales which I commenced on my own responsibility in June 1877 been continued instead of being stopped and deferred till the next December. On 5,000 bags which I then sold a monetary *gain* of Rupees 5,665 was realised, there was a keen demand and a real want of the grain by local merchants for the local markets, and it was unquestionably the time to begin selling with advantage to the people as well as to the Government. As regards the State, the general effect of the transaction, as it has been conducted here, has thus been to cause a heavy financial loss, owing (first) to the abandonment of the original object with which the grain was stored, and (second) to the deferring of the sales to a time when the grain was not wanted for the local markets and could not be disposed of except at a loss. As regards the people and the local private trade, the general effect of the transaction has been perfectly harmless, and it has not checked private imports in any way.

In making the local purchases here, advances of money were given to a few of the more respectable traders to bring in grain, at current market rates, to the local stores, but no bonus of any kind was given.

I do not think that any error was made in the original purchase of grain for distribution of grain-wages and rations instead of money payments, and it was a wise measure to establish a reserve in a division situated as this is, but this reserve need only have been a small one, and the fundamental error made was the conversion of the whole stock originally intended for distribution into an unnecessarily large reserve.

Mr. Weekes.—No. In the Madras Presidency I found some grain already stored in my division, but not a very large amount. No stimulus was given to trade except an advance to ensure regular purchases for camps. The Government did not import enough to enable them to sell to supply the markets. In Chumparun in 1874 I had an immense quantity of grain under my charge, but would not sell, and expended it all either on works in wages and gratuitous relief and for spinning and weaving (a small quantity) or in advances to ryots (the greater portion). In Madras fewer persons have land than in Bengal, and the laborer classes are more numerous. But the question applies to this famine. I may perhaps here mention, though it is not *à propos* of the question, that I believe such advances as I made to all the ryots of a village on their joint and several responsibility to an

extent depending on each man's means and ability to repay is a first-rate plan to manage a famine. I believe all my advances were repaid, and collectively they were very large.

I am inclined to think that Government importation is more effectual than private, and, in a case like the Orissa famine, or in a case as would have been if famine had lasted longer in Madras, ought to be undertaken. Government can work as no individuals can, and there is the risk of empty trains starting on some days, and of partial distribution to favored places through combinations and intrigue. But there is great chance of waste and little definite knowledge to go upon. There are cases in which a railway worked night and day would be insufficient to carry enough food, and in such cases private importation would be not to be thought of.

Mr. Oldham.—I took none of the measures referred to in this paragraph last year. I objected to Government grain being sent to me. I do not now consider that it would have been better to have adopted any of these measures, or even to have received Government grain already purchased.

Generally the conditions under which such measures are necessary depend on the accessibility or isolation of the tract to be provided for. CH. III. QN. 39. MADRAS.

For Orissa in 1866 such measures were indubitably necessary; or, to take a disputed instance, I believe that they were necessary for the sub-Himalayan tracts of North Behar in 1874, but not for the southern parts, nor for any part of South Behar.

Mr. J. H. Cook.—During the famine I had no stores of Government grain for feeding laborers or inmates of poor-houses. The supplies for the poor-houses were made by contract, which was put up to open competition. No advances, assistance, or bonus was made to the merchants, nor did Government purchase, import, or sell grain in this taluk. None of the above was at all necessary in this taluk, for the merchants were very enterprising.

Harry Row.—To meet emergencies Government should have stores of grain, but it should be never sold to interfere with an honest market, but to put down malicious and cruel combination or monopoly of bad grain-dealers.

MYSORE. MYSORE.

Mr. Ricketts.—No stores of Government grain were laid in for the purpose of feeding labourers or inmates of poorhouses. Nothing was done to stimulate trade by offering advances or assistance to merchants. I know of no conditions under which it would be proper and necessary for Government officials to perform the part of grain merchants. Such difficulties as would have to be encountered by the latter in putting down grain at any particular place "would similarly and perhaps to a greater degree have to be encountered by Government officials. In an extreme case the action of Government officials in this respect might produce temporary beneficial effects, but no ultimate good would be effected, but rather the reverse. Whereas the action of persons skilled in trade and knowledge of the markets and working from the most powerful of motives, self-interest, is certain to have the effect (operating almost as a natural law) of developing the grain market in the most favourable and lasting manner.

QUESTION 40.—CAPACITY OF ADMINISTRATION TO COPE WITH FAMINE EMERGENCIES. CH. III. QN. 40.

Do you consider that the events of the last famine have shown that the system of civil administration in your district is strong enough to bear the unusual strain laid upon it, or that any defects have been discovered which might be obviated? Is the area of your district too large for one man to supervise, or of a convenient size? Are your official relations with the officers of the Public Works Department in your district such as are most conducive to the carrying on of relief work? What staff of civil officers have you to carry out your orders, and what duties and responsibilities attach to each? Is that staff of the proper strength and organised in the best possible way, or can you suggest any improvements? Have your native subordinates as a class shown energy, capacity, humanity, and physical activity in carrying out relief measures, or have they been wanting in these qualities? Give a general outline of the manner in which the relief operations in your district were conducted. To what extent did your control go; to what extent was there local independence of action? How was the chain of responsibility maintained between the superior and subordinate officers? How far were you yourself controlled in the relief administration, and how far left to act on your own discretion?

Punjab.—Staff sufficient with some additions for relief work. Relations with P. W. D. amicable. Native subordinates favourably reported.

North-Western Provinces.—The opinion is expressed that the executive officers should be relieved of judicial work. Otherwise the district staff is ordinarily sufficient, but requires supplementing in famine. The Native subordinates are generally favourably reported.

Bengal.—The ordinary civil staff is not sufficient to meet the extra work of famine administration. The Native subordinates are favourably spoken of in most cases.

Bombay.—The civil staff of the district is generally held to be strong enough for ordinary occasions, but it requires strengthening for famine work. The Native subordinates are reported of favourably. A large discretion was left to the collectors under the general orders of Government.

Madras.—Sixteen European and one Native gentlemen have replied.

The ordinary public establishments must be largely expanded in famine, especially in the Madras Presidency, where the large size of the districts renders the administration of famine relief a task of peculiar difficulty.

Ch. III. Qn. 40.

Punjab.

PUNJAB.

Mr. Gore Ouseley.—The only divisions in the Punjab which were affected by scarcity last year were Delhi, Hissar, and Hazara, and in none of these did the famine last long, nor was it of a very aggravated form. In all these divisions the system of civil administration was found, with the little strengthening which the Government considered it necessary to afford to it in the shape of sending a few extra European assistants and some native tahsildárs, sufficient to bear the unusual strain laid upon it.

The rest of the interrogatories in this question may be answered in the negative so far as they raise doubts respecting the judiciousness of existing arrangements, whilst it can be confidently stated that the official relations of the districts and of the Public Works Department officials were conducive to the efficient carrying on of relief works, and that the native subordinates as a class displayed energy, capacity, and humanity and physical activity in carrying out relief measures.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—The civil administration of this district was strong enough to bear the strain of the failure of a single harvest, but it would not have been so had there been a complete failure of the rabi.

My official relations with the officers of the Public Works Department have been satisfactory.

None of my native subordinates have been employed in carrying out relief measures. A few school teachers have been employed as munshis and a deputy inspector of schools as a cashier, and in these capacities have worked satisfactorily. The relief operations have been conducted by a district engineer, who has had the services of—

1 assistant engineer.
1 apprentice assistant engineer,
7 suboverseers,

at his disposal.

As stated in answer to question 38, Chapter III., contracts were in the first instance given to zemindars or headmen of villages whenever they would take them, on the condition that they gave work to their cultivators or residents in their villages. The task-work system was adopted and payments made weekly on measurements, while daily payments were enforced from the contractors to their labourers. Before the heavy rain fell in the beginning of October the contractors were allowed Re. 1–12 per thousand cubic feet, and where the earth was very hard 2 per thousand cubic feet; out of this Re. 1–4 per thousand cubic feet was ordered to be paid to the labourers for undressed work, the balance being available for dressing and contractor's profits. The labourers were able to earn from Re. 0–1–3 to 0–2–0, according to their strength, and a fair quantity of work was done.

After the heavy rain at the commencement of October most of the people employed on the relief works left to plough and sow their fields, and the following reduction in the rates took place per thousand cubic feet:—

	Rs.	a.	p.
For sand - -	1	8	0
For soft soil - -	1	10	0
For hard earth - -	1	12	0

In the middle of December, when the days were short and the cold severe, daily-labour gangs were started, in addition to the works carried on by the contractors, so that all who were too weak to work on the task-work system might obtain a bare subsistence allowance by coming or being sent to them.

None of the sanctioned relief works were taken in hand without my sanction, but when started the district engineer gave the contracts to any of the persons named above who might be sent to him by my order or who came to him of their own accord. I had taken care to make it well known by whom such contracts could be obtained. For the tasking, measuring, and payment of wages the district engineer was responsible, and under him the two assistant engineers were responsible, in the like manner, for the works under their immediate charge.

Sanction of Government had to be obtained before any work could be taken in hand as a relief work. But such sanction having been accorded, I was left to act on my own discretion as to the number it might be necessary to take in hand at any particular time while the pressure of the distress lasted, and until 31st March. After this date the relief works were closed, and not again re-opened until June, when orders were issued that the commissioner of division's sanction was necessary before commencing on any of the sanctioned works.

Captain Currie.—The fault in the system of the civil administration of the district is that executive officers are too much tied down by judicial work. The strength of the district staff is at present inadequate to properly perform its ordinary duties in an average year.

The district is of convenient size, and not too large for one man to supervise. My relations with the Department Public Works officers are of the happiest. I have for the city itself a city magistrate; for the district, a treasury officer whose whole time is occupied with treasury work and supervision of abkàri, stamps, opium, and the trial of all abkári, stamps, opium, and customs cases, and such matters as cotton report, &c.; an assistant commissioner, and an extra assistant commissioner and three tahsildars. The staff is of proper strength if only relieved of all civil judicial work; it is quite inadequate for what is required of it at present. My native subordinates have shown themselves energetic, capable, humane, and active, and have worked hard and well. The relief operations in this district consisted of earthworks for those who could work. On these works gangs were told off according to their capabilities. At the tahsils and at the sudder we had poor-houses as feeders to the relief works. The district engineer reported direct to me, and I reported direct to the commissioner. I had very little left to my own discretion, as the works were arranged in committee, and the commissioner controlled the rates to be paid, &c.

Mr. Lumsden.—I do not quite understand what is meant by "the system of civil administration" bearing "the usual strains laid upon it" in famine times. I have no exception to take to the system of civil administration, except that, in my opinion, in time of famine a sufficient number of civil officers should be relieved of all judicial work for employment on famine duty. The district staff is certainly not strong enough to bear the strain thrown on it in time of famine; it is barely strong enough for the prompt and efficient discharge of ordinary current work. Both the civil and department public works staff must be largely strengthened when famine occurs.

The area of none of the districts in this division is unmanageably large; but when the distress is very severe, and continues for any length of time, I do not consider the district officer can efficiently look after the famine administration and carry on all the ordinary duties of his office.

have found nothing in my relations with the officers of the Public Works Department to interfere with the successful working of famine-relief administration. It must be understood that every Public Works Department officer in a district, except as regards departmental matters, is under the orders of the district officer, and the latter under the orders of the commissioner in all matters connected with relief works; if this is thoroughly understood, no difficulty should arise.

It is needless my detailing the staff of civil officers attached to the districts of my division. Government are well aware of the nature and strength of the staff.

As to organisation of staff, the only suggestion I have to make is the separation of the judicial from the executive branch, a measure which is about to be given effect to.

As regards the conduct of native subordinates, I should say that, as a class, they have not displayed the qualities alluded to; at the same time, I could name some native subordinates who displayed these qualities beyond all praise.

The relief operations, as conducted in each district, will doubtless be described by the deputy commissioners in answering this question. I do not know that it is necessary for me to say more than that relief operations have been conducted generally in accordance with the rules laid down by the North-Western Provinces Government.

At first, however, in the Rae Bareli district, relief works were started under the supervision of civil officers only, and advances were given free of interest to certain talukdars and zemindars to carry out works of improvements which would at the same time afford labour to the unemployed poor. During the recent famine relief may be said to have been given in the following forms in the Rae Bareli districts:—

(1.) On Government relief works managed by Public Works Department officers.
(2.) On Government relief works managed by civil officers.
(3.) On talukdars' and zemindars' relief works, carried out in some instances with funds advanced by Government, in others with funds provided by the talukdars themselves.
(4.) At Government poor-houses.
(5.) Gratuitous relief to pardah-nashin women at their homes.
(6.) Suspension of the land revenue.
(7.) Advances to cultivators for purchase of seed-grain and plough cattle.

My own powers of control may best be described as being those of general supervision. I had also the power as commissioner to sanction the opening of any relief work for which the provisional sanction of Government had been obtained, or, in the event of sudden emergency, to order the commencement of any work for the purpose of giving occupation to the people.

I have also exercised control in directing the closing of one work and the opening of another in order to enforce the distance test, and generally in seeing that the standing orders of Government were being complied with.

The duties of a commissioner in Oudh are very laborious; his judicial work ties him very much to his office, and he is not therefore able to exercise such active personal supervision of relief works as might be desirable. As a district officer in the North-Western Provinces, I was able to do much more in this way than I found it possible to do as an officiating commissioner in Oudh. On the other hand, the executive engineer was able to undertake much of this for me.

As to the extent I was myself controlled in the matter of relief administration, I had to submit the district officer's weekly reports, adding my own remarks, to Government; and in submitting these reports it was my duty to call attention to any points calling for the special orders of Government. I have always understood that in any emergency I might act on my own discretion, reporting at once to Government, provided no action was taken contrary to any of the standard rules without the previous sanction of Government. I have never felt that I was hampered injuriously from not being able to exercise a reasonable discretion, except as regards the rates of wage which were introduced under the orders of the Government of India. I had no power to sanction any departure from them, and I was bound to see that all applicants for work were taken on; the consequence was that, for some six weeks or so, a number of people were attracted to the works who really did not stand in need of relief at all. To this matter I repeatedly drew the attention of Government in my weekly reports, and at length the rates were reduced, with the result I had predicted—an enormous reduction in the numbers.

Mr. Blennerhassett.—No defects in the system of civil administration are apparent; the system is, on the whole, a strong one; temporary assistance was borrowed from neighbouring districts; the area of the district is not too large for ordinary duties; official relations with the Department Public Works are satisfactory; the native subordinates have not been wanting in good qualities, but supervision is necessary to ensure some energy and intelligence; the chain of responsibility was the ordinary one, and relief works in general were carried out in accordance with circulars of the Government. The civil officers had little to do with the relief works, the public works officers being chiefly responsible. A good deal of local independence appears to have been left to the overseers and gangsmen.

BENGAL.

Mr. Worsley.—The events of the famine of 1874 showed that the system of civil administration in this district was not strong enough to bear the unusual strain laid upon it. Between the subdivisional officers and the people a class of officers is required such as I have more than once proposed, viz. an officer in charge of each thana jurisdiction, vested with 3rd-class powers of a magistrate, the powers of a sub-registrar of deeds, the powers of a canoongo (for supervising putwaries), and the executive powers of a magistrate in regard to the supervising of chowkidaree punchyets.

The area of my district is of a convenient size for one man to supervise.

My official relations with the executive engineer of my district only relate to buildings. That officer has now nothing to do with roads.

The staff of civil officers in this district consists of—

At Mozufferpore.

The district officer.
Two deputy magistrates and collectors with full powers.
One assistant magistrate and collector with 3rd-class powers.
One sub-deputy collector.
Two canoongoes.
One district superintendent of police.
One assistant superintendent of police.
One district engineer.

At Hajeepore.

One subdivisional officer with 1st-class powers.
One subdeputy collector and magistrate with 3rd class powers.

At Seetamurhee.

One subdivisional officer with 1st-class powers.
One subdeputy magistrate and collector with 3rd-class powers.

Ordinarily a joint-magistrate is stationed at Mozufferpore and no assistant magistrate, and I presume it is unnecessary to describe the duties and responsibilities of the district superintendent of police, which are the same in all districts.

One deputy magistrate and collector is in charge of the Road Cess and Land Registration Departments and also of the Treasury. In the absence of a joint-magistrate, he has to take a large share of criminal work of the sudder subdivision.

The other deputy magistrate and collector is in charge of the Excise and Salt Departments and of the famine advance collections, has the management of all butwara cases, and takes a large share of the criminal work of the sudder subdivision.

The assistant magistrate and collector tries petty criminal cases and uncontested cases in the Land Registration Department, and is secretary of the District Education Committee.

The subdeputy collector at Mozufferpore is employed exclusively in the Land Registration Department.

Of the canoongoes, one has been employed in making famine advance collections, in collecting the rents of a Government estate, and in making local inquiries in butwara cases and other miscellaneous cases.

The other is employed as an assessor in the License Tax Department.

The duties of subdivisional officers are the same in all districts.

The subdeputy magistrates and collectors at subdivisions try petty criminal cases, take charge of the treasuries during the absence on tour of subdivisional officers, make local inquiries in miscellaneous cases, and assist in the administration of the Salt Department.

The staff at head-quarters is too weak; a third deputy collector and magistrate with full powers is required, and the station ought never to be without a joint-magistrate.

Subdivisional officers are too young and inexperienced, and changes of these officers are made too frequently. An officer with the powers described in section 46 is required in each thana jurisdiction.

The native subordinates, so far as they were employed, showed energy, capacity, humanity, and physical activity in carrying out relief measures in 1874. The tehsildars deputed here from the North-western provinces proved excellent relief officers, and worked most economically of all.

The three subdivisions—Mozufferpore, Hajeepore, and Tajpore—comprising a total area of 2,720 square miles, which were under my charge in 1874, were divided into a large number of relief circles, each circle on an average comprising about 100 square miles of country. Of these circles two were manned by officers of the Opium Department, one by a deputy magistrate of the district, one by an extra assistant commissioner from the Punjab, one by a tehsildar from the North-Western provinces, one by a police officer from the Punjab, and one by an officer not previously in Government service; while the remaining circles were all under the charge of the managers of indigo factories. The former class of officers were assisted by deputy and subdeputy superintendents, and the factory managers were assisted by their own European assistants, to each of whom a salary of Rs. 100 per mensem was paid by Government. At first the relief works to be opened were fixed by the district officer and subdivisional officers; but as the works became crowded with labourers, and applicants thronged in for employment in large numbers, the circle officers were authorised to open new works from time to time on their own responsibility. As a rule, it was my object to prevent more than 500 labourers being employed on one work, and consequently employment was provided on a very large number of tanks and village roads. In the circles manned by Government officers the rates of 1½, 1, and ½ annas per diem for man, woman, and child were generally paid; but in the planters' circles the rates were usually lower. Contract rates were in some instances paid, but to a very small extent. No poor-houses were established, but the persons fit to receive charitable relief were selected by the circle officers, and were either relieved at their homes through the headmen of villages or at the head-quarters of a circle by the superintendent or one of his immediate subordinates. The subordinate agency for numbering and paying labourers on each work was appointed on the spot. The circle officers spent their time in visiting works and checking the returns of their subordinates, and the district officer and the subdivisional officers moved constantly about the district and subdivisions, exercising such general supervision as was possible, and keeping themselves well informed of the state of the people. Each circle officer had a supply of Government grain stored at his head-quarters, and this grain he sold to the public, advanced to agriculturists, and gave away in charitable relief. At a late stage in the famine the grain was also used in paying labourers on relief works. A few native doctors were employed in some circles, but the relief measures were so effectual that they had little to do.

Practically, I was allowed to act entirely on my own discretion in regard to relief administration. The one aim constantly before each officer's eyes, from the highest to the lowest, was to prevent the death of a single person, and my belief is that scarcely a person did die in the famine from starvation.

I must here respectfully express my opinion that the failure of the Government to strengthen the hands of the local officers on the first signs of famine was the main cause of the extravagant expenditure which subsequently was incurred on relief works. Two months before any bad symptoms appeared I had asked that a second civil officer might be sent to each of the worst subdivisions of Tirhoot, but was informed that none were available. Again, during the short time I was at Durbhunga, from the middle of February to the beginning of March 1874, when labourers began to flock to the only relief work then open in the vicinity of Durbhunga, and when the only public-works officers in Durbhunga and Modhubunnee subdivisions were an engineer and two overseers, I wrote most urgently for more overseers and sub-overseers, but was told to use local agency. When at last some assistance came, things had gone too far to be easily set right again. Having seen the effects, therefore, of enormous crowds of labourers collected together on a mile or two of road near Durbhunga, I considered it necessary to avoid all risk of such evils in Mozufferpore, Hajeepore, and Tajpore subdivisions, more especially as I had no sufficient staff of public-works officers for supervising large works, and I accordingly adopted the policy of opening numerous works in all distressed localities.

The system of making advances was by far the best feature in the whole famine administration. Out of Rs. 6,74,586-11-3 advanced in Mozufferpore and Hajeepore subdivisions (I cannot speak of Tajpore subdivision, which has been included in Durbhunga district since 1875) a sum of Rs. 5,97,670 has been collected up to date, and the greater portion of the balance will probably be collected in a few months.

The appointment of planters to the charge of circles was also a great success. Being much interested in saving the lives of their tenants and labourers, and at the same time anxious to prevent a permanent rise of wages and the demoralisation of the peasantry, they were specially careful not to give relief recklessly or unnecessarily. They also possessed peculiar facilities,

from their influential position, for ascertaining the actual condition of all villages in their circles.

Mr. Toynbee.—To these questions I should reply without hesitation that the system of civil administration in no district in Bengal is equal of itself to bear the unusual strain of famine-relief operations conducted on modern principles. The staff of officers ordinarily allowed to each district has its hands now-a-days more than full in complying with the demands of improved administration. The strain produced even by the indirect effects of a famine, such as the increase of crime, the collection of special information, the inspection of crops, and so on, entirely paralyses the ordinary work of district staff. The obvious remedy is to increase the staff, but this is a step of which the present state of the finances will not admit; nor would the experience of the past, as to recurrence of famine, justify the increase of the permanent staff solely in anticipation of famine. The area of the Patna district, of which I have charge, is in round numbers 2,000 square miles, and is of convenient size under ordinary circumstances. A district officer in Bengal has now hardly any official relation with the Public Works Department. Since the introduction of the Road Cess Act each district has its own engineer to supervise the expenditure of the funds raised locally, and it is in concert with him that relief works would ordinarily be carried on. It is only in times of severe famine that extraneous aid would be required from the Public Works Department. The staff of civil officers in the Patna district is as follows :—

At Head Quarters—
- 1 Magistrate Collector - } Covenanted Civilians.
- 1 Joint Magistrate and Deputy Collector - - - } Covenanted Civilians.
- 2 Deputy Magistrates with full powers - - - } (Uncovenanted, two natives one European.)
- 1 Deputy Magistrate with second-class powers - } (Uncovenanted, two natives one European.)
- 1 Canoongoe - - - } (Uncovenanted, two natives one European.)

At Barrh and Behar subdivisions—
Uncovenanted—
- 1 Deputy Magistrate and Collector with full powers (in charge).
- 1 Sub-Deputy Collector.
- 1 Canoongoe.

At Dinapore subdivision—
- 1 Cantonment Magistrate - Covenanted Military officer.

Road Cess Establishment—
- 1 District Engineer.
- 2 Overseers.
- 2 Suboverseers.

The joint-magistrate takes the largest share of the criminal and municipal business, and has also such revenue work as the collector may give him to do; the rest of the head-quarters staff work under the immediate orders of the collector. One deputy collector has special charge of the treasury; another of miscellaneous departments, such as excise, land acquisition, land registration, and so on. The subdivisional officers have similar powers to those of a district officer within the local limits of their own subdivisions, and, with the exception of criminal work done by benches, do all the criminal and revenue work therein. I cannot suggest any improvement in the existing state of affairs, which is sufficient to meet all ordinary administrative requirements; but, as I have said before, it is not sufficient to bear the burden of famine-relief operations on a large scale. As far as my experience goes (*i.e.*, in Orissa in 1867), selected native subordinates have shown themselves well suited in every way to conduct relief operations under frequent and strict European supervision. But if this be wanting, they are apt to become lax and wanting in energy, firmness, and especially thoroughness. I should say that they were decidedly inclined towards humanity rather than to the principles of political economy. The relief operations in Pooree, in 1867, were conducted as follows:—There was a special relief commissioner for the province of Orissa (three districts), acting nominally under the orders of the Calcutta Central Relief Committee, through their President, the Honourable C. P. Hobhouse. Practically the whole control of relief was under the special commissioner. Under him was a relief manager for each of the three districts, a young covenanted civilian of two to four years' standing. Each relief manager had under him a staff of deputy collectors, inspectors, and native doctors, each told off to certain specified areas. The general control over money and grain, and the decision of principles, vested in the relief commissioner. Each relief manager was allowed full latitude in carrying out those principles into detail. In fact, the system was precisely similar and parallel to that of the ordinary civil administration of the country, the relief commissioner corresponding to the divisional commissioner, and the relief managers to the magistrate collectors of districts. In cases of severe famine I do not think any system could be better. Ordinary local distress can always be met and dealt with by an active and energetic district officer, if his regular staff be slightly strengthened from other non-affected districts. But when real famine comes, and relief operations are on a large scale, it is essential that an arrangement be made similar to that in force in Orissa. It is impossible for one officer to do justice to ordinary work and famine work at the same time. Ordinarily the district officer himself would be the best officer to have charge of the relief operations, routine work being done by a junior. In any case he should be consulted by the special officers in all matters affecting his district, both of principle and detail.

Mr. Marindin.—In the Durbhunga subdivision of the Mozufferpore district during the famine of 1874-75 the relief administration was in the hands of the subdivisional officer, who was (for relief purposes) immediately under the authority of the additional commissioner. The subdivision was divided into circles, each circle being placed under the charge of a circle officer who was under the control of the subdivisional officer. I was in charge of a circle which comprised about 130 villages, small and great, *i.e.*, population of about 100,000. For the purposes of gratuitous relief this circle was divided into 10 subcircles, in the most central village of which there was a small grain golah located, capable of containing about 150 maunds of grain at a time. These small golahs were supplied from one or other of the two central golahs in this circle. The supply of the central golahs was managed from the subdivisional headquarters by the transport officers, the supply of the small golahs was managed by the circle officer. To each subcircle there was appointed a mohurir in charge of the golah, and an inspector. It was the duty of the inspector to visit continually the villages in his circle, to search out and report any case requiring relief that came to his notice, and report any case where relief was being erroneously administered, to the circle officer.

The lists were made out for each village every week according to their report, and an order given to the mohurir in charge of the subgolah for the issue of the requisite portion of grain. The mode of distribution was through the jeyt ryots of the village. A week's supply according to the requirements of the villages was given to the jeyt ryot, who distributed it in the village to the persons on the list. By this course large assemblages of persons at the golahs were avoided. We also looked to the jeyt ryot to bring any case requiring relief to the notice of the inspector. The wages of the inspector were Rs. 15 a month.

In addition to these duties, he had charge of the issue of cotton for spinning to Brahmin and other women of respectable castes.

Ch. III. Qs. 40.

Bengal.

At two central places in the circle in the vicinity of the central golahs there were poor-houses where wandering beggars, orphans without friends or relatives, and persons found too weak to labour on the works were taken in and fed. As far as I remember, the number in the Bahera poor-house, which was always fullest, never exceeded 50. There was a native doctor in charge of each.

There were, besides gratuitous relief, two classes of relief works, one under the Public Works Department and one under the circle officer. The circle officer had no control over the Public Works Department works; he could only report anything requiring notice to the subdivisional officers. The returns of the numbers employed on these works were sent to the subdivisional officers through the circle officer.

The works under the circle officer were village works, and consisted principally in deepening old tanks or constructing new ones. These works were placed in charge of a resident malik or a principal ryot in the village, through whom the workmen were paid. Later on the services of an apprentice in the Public Works Department were placed at the disposal of the circle officer to assist him in supervising their work. In addition to these two modes of relief (gratuitously and on works), advances in grain and money were also made to the cultivators and zemindars. These were made by the circle officer. Unstamped bonds were taken from the recipients; in many villages the zemindars received advances on behalf of their ryots; in others, the principal ryots combined to take advances on their own behalf and on behalf of the poorer cultivators who had no security to offer; moveable and immoveable property was pledged as security, and in cases of doubt inquiries were first made as to its existence. All these advances were (I believe) recovered. In a few instances money was advanced for works of utility, such as tanks and wells. This village-relief system kept the people in their homes and prevented them congregating in large numbers at central places, thus avoiding the danger of outbreaks of cholera and other sickness. It ensured relief being brought to old, sick, and infirm persons. It met the case of those who would prefer dying of starvation to seeking relief in a poor-house. There was no chance of persons trying to hold out against starvation too long, and eventually dying on their way to the poor-house or in search of it. The relief of the people was entrusted to those who, from dread of public opinion and motives of personal gain, were interested in administering it. As you must have village inspection and relief for sick and infirm persons, it is less likely to give rise to complications if persons generally needing gratuitous relief are included in it. A village inspector might insist upon persons finding their way to the poor-houses who were not physically fit to do so. On the other hand, there were great opportunities for peculation by collusion between the paid inspector and the jeyt ryots, which it was difficult to check. There was absolutely no return made by the people for the food given them, and relief was made too easy for them. This was the greatest drawback, but I think on looking back that, after the first rush of work was over and the subcircles organised, something more might have been done in this direction. The most unsatisfactory part of the relief administration was the work upon village tanks. Until a professional assistant was given him, it was impossible for the circle officer to check the work on all the tanks in his circle, and he could not delay issuing money for payments to the persons in charge until he had satisfied himself of the character of the work done. The result was at first considerable peculation. Afterwards, when I had the assistance of a Public Works Department apprentice, and also of five or six duffadars (trustworthy men) whom I employed for this purpose, it was possible to keep a check on the expenditure. I would argue from this that it is absolutely necessary to give a civil officer proper assistance if he is to look after and supervise relief works, otherwise misappropriation of the public money must take place upon a considerable scale.

Bombay.

BOMBAY.

Mr. Hewlett.—The only point in this paragraph I need notice is to take the opportunity of expressing my conviction that, although native officials do very well as subordinates, they do not possess sufficient power of organisation to qualify them for being entrusted with an independent charge. The difference in relief arrangements in talukas under European officers and those under native officials was most marked. There should be, in my opinion, an assistant collector in charge of each taluka, and he should have a staff of European assistants, the native officers being relegated to other duties. The more European supervision there is of village inspection, so much the more thoroughly will the work be done. A European assistant should not have more than 50 villages in his beat; a staff of five supervisors and 10 inspectors should be allowed under him. The immense importance of a rigid village inspection cannot, in my opinion, be too much insisted upon.

Mr. Norman.—The events of the last famine showed most clearly that the ordinary civil administration of the district is insufficient to bear the unusual strain of a famine. The area of the district is not too large for one man to supervise, provided he has a sufficient number of subordinates under him. I have always been on the best terms with the officers of the Public Works Department, and we worked together without any hitch arising.

The ordinary staff of the district consists of a collector, two or three covenanted assistants, an uncovenanted assistant, who is city magistrate, and a deputy collector in charge of the accounts. There is also a mamlatdar in each taluka. In case of a severe famine there should be a special mamlatdar appointed in each famine taluka, as well as a special European assistant. In the larger talukas, where a mahalkari now exists, a special mahalkari should also be appointed. The officers of the survey department are admirably adapted for famine duty, because they and their subordinates possess an intimate knowledge of the people and of the country. The native subordinates under me, with very few exceptions, worked admirably. In this district, as far as possible, a European assistant was given charge of one famine district. He had under him a special mamlatdar, and in one of the talukas a special mahalkari as well. A few extra karkuns, overseers, and native doctors were also engaged to lay out and superintend civil agency works, and to attend to the sick. As the famine increased in severity village inspectors were appointed, whose duty it was to visit every village in their respective circles and report to their superiors. All orders were issued by me in the first instance. No works were commenced without my sanction, but with that exception my assistants were left to battle with the distress as best they could, acting under the general instructions of Government. They were also required to submit a weekly diary for my information. In the same way, I was controlled by the commissioner and by Government. But on me rested the responsibility of doing my utmost to alleviate distress. I considered that very great discretion was vested in me, and I should not, and did not, hesitate to undertake measures involving a large expenditure when I considered the

same necessary. Government placed the fullest confidence in the collector, and as long as we acted on general fixed principles we were not interfered with.

Mr. Spry.—I think that the system of civil administration of my district is good enough. When any unusual strain such as famine comes, the system is equal to it, only it requires strengthening by increased establishments.

The area of the district is 5,695 square miles, and it is compact in formations except for one outlying jaghir (Gajendragad), containing 27 villages. It is not too large for one man to manage, except that in times of famine the extreme pressure of important work will prevent that one man from going about much and personally supervising. That must be left to trustworthy subordinate officers.

My official relations with the P. W. D. officers have generally been conducive to the carrying on of relief work; when they have not been, the peculiarity of the individual rather than the system has been at fault.

There are eight talukas and one petta in the district. In each of the former there is a mamlatdar and his first karkun, and in the latter there is a mahalkari, who is immediately subordinate to the mamlatdar, to whose taluka his petta is attached. All these officers have either second or third class magisterial powers for the conduct of criminal work. They have also to conduct the duties of realising the revenue, of keeping the accounts, and of general revenue administration, under the orders of their superior officers.

There are also—

One Huzur deputy collector, who has charge of the treasury and account department, and has also first-class magisterial powers. He also takes the place of the collector at headquarters, when that officer is on circuit.

Two assistant collectors and one district deputy collector. The former have revenue charge each of three talukas, and are also divisional magistrates within their charges. The latter has revenue and magisterial charge of two talukas.

Further, there is a superintendent of police, who has immediate control over his department.

Some of my native subordinates have shown energy, humanity, and physical capacity in carrying out relief measures; others have failed most lamentably, and especially some who, having got as high in promotion as they could expect, have had no incentive for further exertion.

The villages were all divided off into circles, over each of which was a circle inspector, who had to see that the village officers looked after relief measures. In some cases divisional inspectors were nominated, who had each a number of circles to supervise. Over the whole number of circles in a taluka was placed the relief mamlatdar, who also had generally to supervise all the relief houses. An assistant or deputy collector then had charge of each taluka, who supervised all relief operations, including the relief houses, hospitals, and civil agency gangs. In some places, where the pressure of famine was greatest, revenue survey officers were appointed to assist the assistant collectors generally, and particularly to look after relief houses and people under special treatment. The relief houses were immediately supervised by committees, consisting partly of official and partly of non-official members. There were also a certain number of town inspectors, road patrols, &c., all under the orders of the relief mamlatdars and assistant collectors.

My control consisted in issuing instructions and orders for general guidance, and in deciding matters on reference. Local independence of action was given to the officers in charge of talukas so far as that action did not militate with instructions and orders. Matters of detail could be settled by them, and others of importance were referred.

All officers in charge of talukas sent to me weekly reports of their proceedings and of matters relating to relief in their respective charges. The relief mamlatdars and special officers reported in the same way to the taluka officers, and the inspectors to the relief mamlatdars.

Nominally and to a certain degree I was controlled by the commissioner, but I had the widest discretionary power given me, and I was informed by Government that I was "absolutely responsible."

Mr. Moore.—I think our system is strong enough for ordinary years, and that in extraordinary years we only want a little extra assistance. (2) The area of the district proper is not I think too large, but the Political jaghirs attached made the work somewhat heavy. (3) I think that the Executive Engineer should be placed on the same footing as regards the Collector as the District Superintendant of Police. I think that the correspondence between the Executive Engineer and the Superintending Engineer and Government should pass through the Collector's office, so that the Collector might be kept better informed as to what is going on in the district. At present no such information reaches him; he has to find out for himself what is going on. (4) The civil officers at my disposal are as shown below—

1st.—Assistant Collector and Magistrate, F. C., in charge of the talukas of Satara, Jauli, Wai, and Koregaon.

2nd.—Assistant Collector and Magistrate, F. C., in charge of the talukas of Karad, Patan, and Khairapur.

Extra 2nd Assistant Collector and Magistrate F. C. in charge of the talukas of Walwa and Tasgaon.

District Deputy Collector of Khatau and Man.

Supernumerary Assistant Collector and Magistrate 3rd Class.

Huzur Deputy Collector and Magistrate, F. C.

Superintendent of Mahableshwar and Magistrate, F. C.

Superintendent and 3rd Class Magistrate of Panchgani.

In addition to the above there are 11 Mamledars (one for each taluka), 2 Mahalkaries (one for the Khandála and the other for the Shirála petas), 11 awal karkuns, with other establishment under each of the eleven Mamledars, also village officers, viz., patels and kulkarnis. All of these officers perform the revenue and magisterial work for their respective charges.

Mr. Percival.—The Sholapur district is of a convenient size and is divided into the right number of talukas. It is 4549·11 square miles in extent, and has a population of 718,000 persons. No change in the administration or the staff is suggested by the famine, nor in the relations between the departments. The native subordinates showed great activity in relief operations; capacity and humanity varied with individuals, but were on the whole good. Relief was first given by opening small works all over the district about the middle of September. Supervision was insufficient and the numbers ran up till in January there were 76,000 persons on works under civil agency, and those under P. W. department had fallen from 33,000 to 20,000. The civil wage was then lowered and the small works gradually closed; but though the numbers on civil works fell to 4,000, those under the P. W. department never rose above 50,000. The ordinary civil staff for the district consists of two assistant collectors and a deputy collector in charge of the treasury. Under them are taluka officers and their establishments. In each village are a headman, an accountant, and village police and servants. The district police are under a European superintendent. During the famine this staff was increased to five assistant and three deputy collectors, so that there was one in each taluka. An extra mamlatdar or taluka officer was appointed in each taluka for famine purposes, with an establishment including subordinate

Ch. III. Qn 40.

Bombay.

medical officers, suboverseers of works, and village inspectors. They were expected to move actively about their charges, to search out all cases of distress, and to carry out all the orders of Government for giving relief. The authority of the collector over these establishments was complete. His discretionary grant for charitable relief of the infirm poor was unlimited. He was directed not to open new works without first obtaining the sanction of Government, but practically he had often to do so in anticipation of sanction. He was expected to keep Government thoroughly informed of all that was being done, and he received full general instructions. His work was under the direct supervision of the commissioner of the division, who visited the district frequently; the works and poor-houses were reported on by the sanitary commissioner, and his Excellency the Governor was himself at Sholapur several times during the famine. With regard to the works under the P. W. department, the collector had to keep himself informed of the numbers upon them and of the probable requirements, and to apply for the opening of works where needed. The P. W. department was strengthened by several engineers. The collector was also president of the Famine Relief Committees which were established in every town. The action of these Committees was independent of Government, but Government officers were leading members of them and watched their proceedings.

Mr. Ramsay.—I think our system of civil administration came out very well during the recent pressure. It must be remembered, however, that in this district the distress, though severe, never amounted to actual famine. My present relations with the Public Works Department in both branches are most harmonious, and have always been so. There are 12 talukas each, with a mamlutdar (tahasildar) at its head, who is a second-class magistrate. There are four assistant collectors, one railway magistrate, and a Huzur deputy collector at head-quarters. This staff has been found ample. The subordinate judges aided materially in organising private charity. All did their duty according to their abilities. The relief works consisted of roads constructed under the executive engineer. But all plans were sanctioned and funds provided by the collector, executive details being left to the engineer. The whole, of course, was under Government supervision. Not having been in the district at the time, I cannot give further details. Just now there are some three storage tanks being constructed by the irrigation department. But I have no control whatever over these works beyond controlling the supply of labourers and seeing after their comfort and so forth.

Madras.

MADRAS.

Sir W. R. Robinson.—The civil administration of every district needs that liberal strengthening and expansion on the occurrence of a famine which has to be allowed, for the ordinary peace establishment of the country will not bear the strain of the campaign. The occurrence of a very severe famine once in a generation is no reason for extensive change in the civil administration of the country, which is fairly adapted to the occurrences—famine included — of the time. Some of our districts will however be better of sub-division for general improved administration. The point, however, to which the attention of the Commission must I think be directed is the constitution of this accession of strength, and here I am satisfied that the policy which has characterised the management of the South Indian Famine of 1877–78 requires very careful examination before it is accepted as a precedent for the future.

I hold * that municipal commissioners and local fund boards — more especially in respect to their native element—should be largely consulted in respect to relief operations of all kinds—selection of works, &c., &c., within the range of their responsibilities; and should be entrusted with much of the administration of gratuitous relief under careful supervision. In this respect the administration of the late famine has been reprehensibly defective in my judgment. I am aware that instances of misfeasance and neglect can be heaped up against the lower native agency to whom the detail of administration has after all to be left; but this want of integrity lies mainly, I believe, in the fact that an alien superior bureau is necessarily thrown for its aid in administration on the lower orders of the people, who naturally show more wit than moral tone under such supervision. But I am not prepared to abandon hope that native agency, well managed, would on the whole come well up to the mark of what the management of their poor requires in this country. My belief is that centralised alien bureaucratic administration of famine is never likely to be more successful in saving life, &c., in India than a similar direction of poor law administration would prove in England.

The district covenanted administration must be so strengthened as to enable its head and superior divisional officer really to direct the administration without becoming personally managers of camps, &c., and practically famine relief officers, or being obliged to "let things slide" as occurred in Bellary, and for a time elsewhere.

As already noticed I do not consider the relations between the civil administration of a district and the Department of Public Works well adjusted under the circumstances that have existed up to this time; and the famine disclosed much weakness and want of rapport. I fail to see how the recent reorganisation will mend matters traversing as it does more largely than has obtained for some years a district administration in this department.

Mr. Longley.—The events of the last famine have shown that it would be advisable to divide the area now allotted to the supervision of one collector.

Eight thousand (8,000) square miles is too large an extent for one man properly to supervise, and in times of *pressure*, like the famine, the strain was too great. With the district divided into two you will have a *responsible* man with an effective establishment in charge of a manageable area, which I do not consider the present extent to be.

I am very strongly of opinion (*vide* answers to Section I.) that in all matters of labor, relief administration, *e.g.*, the selection of persons for relief-works, the hutting and general arrangement of labor-camps, the transferring of coolies from one work to the other, the arrangement and carrying out of tests, and the system of paying the coolies, the Public Works officers, from the district engineer downwards, should be completely subordinate to the collector. Had this been the case during the late famine, I consider the relations between the Public Works Department and the Revenue officers would have been more harmonious. On all professional points I would, of course, not allow any interference from the Revenue officer. The relations between the Public Works officers and the Revenue officers in Salem have not been harmonious, the engineers, as a rule, looking upon their department as entirely a separate one, and not part of the district machinery of which the collector should be the sole controlling power. There is too much tendency in this department to the "*imperium in imperio.*"

* See my minute of inspection of Salem, dated May 1877, for observations on neglect to utilize even the local fund dispensaries during the late famine.

As regards the staff of civil officers in Salem, there are at present—

(1.) Covenanted sub-collector and joint magistrate in original revenue and magisterial charge of three taluks.

(2.) One covenanted head assistant collector and magistrate in original revenue and magisterial charge of two taluks.

(3.) One uncovenanted (native) deputy collector and magistrate in original revenue and magisterial charge of two taluks.

(4.) One European covenanted assistant collector.

(5.) One native covenanted assistant collector (removed).

(6.) One uncovenanted European assistant in charge of the Huzur treasury.

I cannot suggest any improvement in the staff or organisation of my divisional officers.

The native subordinates have, as a rule, been capable and energetic and physically active in carrying out relief measures. Among the village officers (munsifs) it has been observed that *caste* prejudices have occasionally interfered with the exhibition of humanity, *e.g.*, a Brahmin munsif hesitating or neglecting to relieve a starving pariah because he was a pariah. This however was quite the exception.

The Salem district has an area of 8,000 square miles with a population of close upon two millions. The Oosoor taluk is on the Mysore plateau, and the other taluks slope down from this to the level of the plains below; Oosoor, Dharmapuri, and Krishnagiri lie high and dry, and these with Utankarai, Trichengode, portions of Salem and Namkal taluks were the most famine-stricken parts of the district. In these taluks there was no dry cultivation whatever, and the crops raised under wells scanty.

Relief-works under the direction of the collector and his subordinates assisted by the Public Works staff and local fund staff of the district were commenced in October 1876, and up to September 1877 (when all labor relief was handed over entirely to the professional agency) the following works were carried out:—Upwards of 1,000 public wells and drinking ponds were deepened and improved, 650 tanks were put into thorough repair, 230 miles of new road constructed, 80 cart-tracks leading to villages opened out and widened, and 1,300 miscellaneous improvements effected in villages. These works employed 2½ per cent. of the population at a cost of ten lakhs from October 1876 to September 1877. The works under Revenue agency having come to an end, it became necessary to devise some large works to be carried out by the Public Works Department, when the following large irrigation works (which, *if completed, will be of* permanent benefit to the country) were put in hand between September 1877 and the close of the year:—

Marandahalli - - -	Dharampuri.
Baroor Pennagoondapuram } -	Krishnagiri.
Veniar - - - - -	Utankarai.

For the southern taluks work on the Imperial lines of road was provided, and for the weakly on civil agency works breaking and stacking metal was continued.

My control as head of the district extended over the whole district, and I was perfectly independent in carrying out famine operations which had received the sanction of the Board of Revenue and Government. Each divisional officer was held responsible for carrying out the orders received from me as head in their entirety, and the tahsildars were in the same manner held responsible to their divisional officers.

Mr. Price.—In Cuddapah the system of civil administration *most* certainly was not strong enough to bear the strain brought upon it, and I believe that this was the case everywhere. European officers worked with a will, and it was not for want of exertion on their part that things went wrong. The chief defects were the immense areas, and the multifarious duties which the collector and divisional officers had to perform. The Cuddapah District is over 8,000 square miles in extent; about half of this is under the sub collector. The permanent Revenue staff is one collector and district magistrate, one sub collector and joint magistrate, one head assistant collector and magistrate, one assistant collector and magistrate, one general charge deputy collector, one treasury deputy collector. Each of the eleven taluks into which the district is divided is under a tahsildar who is, or ought to be, a kind of minor collector, and who is further a third or second class magistrate, and there is a sheristadar in each taluk who is really a superior head accountant, with third-class magistrate powers, but who, under existing orders, should do as little criminal work as possible.

This was the staff which was in the district when the famine fell upon it; there was however no assistant collector, his place being filled by a native temporary deputy collector. The first defect found was that when the collector or a divisional officer was away at the point A trying to put things right, something at the point B, some fifty or sixty miles off, would turn up, calling for his immediate presence. He would hardly get to B, when something would occur at C, and he would have to start off for that place forthwith. There was never time to put things into order. As for giving any, but one or two tahsildars, instructions, and relying upon their carrying them out, it was out of the question. The next defect was that crime increased and filled the jails and police lock-ups. It was impossible for the magistrates to, in their revenue capacity, look after the famine, scamper over the country, and try prisoners too. The next defect was that there was no sufficient staff to look after or organise works. Reports and returns had to be sent in and the work of the district carried on somehow. Works consequently had to pass a good deal into the hands of underlings, and suffered accordingly.

The next defect was that when it was considered necessary, in order to relieve officers, to appoint special native magistrates, &c., we had, as a rule, nothing but a very inferior class of men to put in. The remedy for all the defects mentioned, excepting the last, is to strengthen establishments. Those which we now have are spread over enormous areas and are barely sufficient to work the districts in times of prosperity. The moment any pressure comes they must fail. I would suggest, as an improvement, that every collector should have a deputy collector and first-class magistrate as his personal assistant (the treasury deputy collector is said to be this, but he is not; he is merely the accountant-general of the district), and that this officer should not be moved about in the way in which they, for some years past, have been. I would give the sub collector an assistant, or deputy collector, to help him. I would increase the number of deputy tahsildars and so decrease the work of the tahsildars. The number of statements, returns, and reports called for now-a-days is far more numerous than it used to be even when I first entered the service, and officers, from the collector downwards, are from sheer necessity degenerating into desk-men. As regards the last defect alluded to, I would propose improving matters by giving better pay and turning out of the service men who are really perfectly useless. The grades through which men ought to work up to a deputy collectorate are, first, Revenue inspector (which is higher than that of any one on the taluk establishment of lower rank than the taluk sheristadar, and which is supposed and ought to give very considerable revenue experience); second, taluk sheristadar; third, deputy tahsildar; fourth, tahsildar. But the pay of the Revenue inspectors is too low. The three grades are paid Rupees 30, 25, and 20. The last-named salary is that of the first two gumastahs of a taluk Cutcherry. The consequence is that, as the life is rough and involves much moving about, for which no travelling allowance is given, the post, instead of being coveted, is anything but. A good man in

the Huzur knows that he has a better chance of getting better pay if he remains where he is, and he remains on if he can, even at the sacrifice of pay, and an incapable, or some man whom his native or European superior wishes to get out of the office, becomes very frequently a Revenue inspector. I would increase the pay of the Revenue inspectors to Rupees 30, 40 and 50, and make them pass, for first class, the Revenue test, lower grade, and, before being qualified for promotion to taluk sheristadar (on Rupees 60), pass the test criminal, lower grade. Where men were certain that getting into this class of what ought to be very useful public servants would, with common industry and honesty, lead to advancement, we should, I feel assured, get a better style of subordinates, and on an emergency have men upon whom we could depend, instead, as was, as a rule, the case, of a parcel of effete old men. Had there been efficient subordinates available during the famine, a host of blunders and losses and quires of paper would have been saved. The only district in which I have been, which is small enough for one man to supervise, is this (Chingleput), which is the smallest, excepting the Nilgiris, in the presidency. It is some 2,600 square miles in extent, which is somewhat less than one-third of the area of my last district (Cuddapah) and less than one-fourth of the area of that in which I was before (Bellary). I have not been in this district long enough to be able to form an opinion as to the official relations between the Public Works Department and civil department. They vary in every district in which I have been, but they are generally not of a cordial character. In Cuddapah I certainly did not, for a long while and until the matter was prominently brought to the notice of Government, have any help from the Public Works Department head of the district. He would neither take over works himself (this was before September 1877), nor would he advise, inspect, or make his officers inspect, those which we had in hand. As matters now stand we are perfectly powerless. We can ask for advice, plans and estimates, and that is all. I do not think that, as a rule, the officers of the Public Works Department care to talk over matters with the civil officers. This is natural enough as they are professional and we are not. I certainly would not care to be troubled with the views of an engineer on Revenue matters.

The staff of this district is as follows:—

Collector and magistrate.
Sub collector and joint magistrate.
Assistant collector and magistrate.
General charge deputy collector and magistrate.
Treasury deputy collector.
Collector's sheristadar.
Six tahsildars, six taluk sheristadars, six deputy tahsildars, including one town magistrate for Conjeveram, and a staff consisting of clerks at head-quarters in the sub and general deputy collectors' offices, three Revenue inspectors and nine gumastahs in each taluk, and two in each deputy tahsildar's office.

The sub collector has revenue and magisterial charge, both original and appellate, of three taluks. He has to try all first-class magistrate's cases occurring in these, to supervise the working of his tahsildars, to dispose of appeals from their orders, and of their reports to him. He has, besides this, to perform the business devolving upon the vice-president of the local fund circle of Chingleput. He has once a year to make the annual settlement of at least two taluks. The general deputy collector has the same powers and duties in the two taluks of which he is in charge as the sub collector has in his. He has however no local fund work.

The assistant collector if passed, which he most frequently is not, has generally the immediate charge of the collector's taluk, signs letters, does miscellaneous work for the collector, and takes magisterial work and suits under Act VIII. of 1865.

The treasury deputy collector is mainly in charge of the treasury and accounts, and he ought properly to do nothing else. He is supposed to be in charge of the press and English records, to prepare drafts of reports of various kinds, and to supervise the whole of the English and account branches of the office, but he rarely does this. Here I found the press so badly managed, and the accounts so much delayed that I took it from the deputy collector and made it over to the assistant.

The collector's sheristadar is the head of the vernacular department, drafts letters and reports on matters more difficult than those of ordinary routine, and orders on vernacular papers which may be referred to him, manages abkari correspondence, has statements for the board prepared, and is really much more the collector's personal assistant than is the treasury deputy collector. He has, at the annual settlement, to go over all the accounts and make the necessary preparations for the settlement, to read all papers brought for disposal at that time, and to lay them before the collector for orders.

He has also to examine all periodical statements regarding the collection of revenue, &c., sent in by tahsildars and divisional officers. The tahsildars have to supervise the collection of land revenue, to dispose of applications for lands for cultivation, to move about and examine cultivation, dispose of reports from village officers and Revenue inspectors, try magisterial cases, which are generally very numerous, reply to references from, and supply information to, their superiors, and to perform a mass of miscellaneous work which it is impossible to enumerate. A tahsildar who does his business conscientiously has enough to keep him going from morning until night, and then he cannot, unless he is a very good workman, get through all that he has to do. The taluk sheristadar's business is mainly to look to the accounts and prepare the periodical returns. He assists the tahsildar in magisterial work of a simple nature, and, where he does his duty, he has quite enough to perform.

The deputy tahsildars have, in a minor degree, the same work as a tahsildar, but they have no treasuries, and their responsibilities are not so great; they have a good deal of magisterial work. The Revenue inspectors are supposed to be constantly on the move, to check and examine the cultivation in the villages in their respective ranges, to check the curnam's accounts and inspect shavi (withered crop), see that the collections are regularly and properly made, bring to the notice of the tahsildar any matter appearing to call for attention, conduct sales for arrears of rent and revenue, report upon such cases as are referred to them by the tahsildars, and to do much miscellaneous work. They have no original authority and can themselves decide no case. If the pay and the class of men were improved they might have power in petty matters and decide others of moderate importance, subject to appeal to the tahsildar, who, with this authority, would be acquiring experience of a duty which he would be called upon to perform when a deputy collector. I think that if the assistant collector was not always being changed (I have had three since March), the present superior staff is, as regards Chingleput, sufficient. The organisation appears to me to be good enough. I could not suggest a better, but I would increase the number of Revenue inspectors from three per taluk to four (Conjeveram alone has that number), and to get a better style of man, I would increase the pay of the head gumastah of each taluk from 20 rupees to 30. He has very many responsibilities and is hard worked. The strength of the taluk establishment is not sufficient to carry on work rapidly. There ought to be another man in each office. As a class I do not think that the native subordinates came out well during the famine. There were, of course, some honorable exceptions of men who worked in a very satisfactory way, but they were few in number, and were under European officers. The remainder required constant driving, and in some cases, showed the utmost indifference for the sufferings of those around them, and utter disregard

for the responsibilities of their position. My deliberate opinion, after experiment, is that no native can be trusted in a position of command during a famine. They want, if honest, decision, firmness, and energy; they in adverse circumstances lose heart and head, and, if dishonest, their sole idea is to make money out of the event. As subordinates, and where they have had good men to lead, some natives who were under me did right well, but as I have said they were few; I could count them on my fingers.

The mode in which relief operations were conducted in the Cuddapah district was as follows:—There are eleven taluks. Of these, four were under the sub collector, two under the head assistant, one under the special assistant collector, one under a special deputy collector, who was an European deputy director of revenue settlement, two under a special civilian from Bengal, who, for part of the time, held the remaining taluk which was, however, on my getting a fuller staff, placed under another special officer. For a portion of the time one taluk was under one native deputy collector, and two were under another, but matters went on so badly that I had to put their charges under European officers as soon as I got them, and give the natives magisterial and revenue work alone.

Each of the officers specified was a divisional officer and was in direct communication with me. He was, until the Department of Public Works took over the works, in charge of them and of gratuitous relief of all kinds. He was directed in his operations by general orders from me, and these he had to carry out. With matters of petty detail I did not interfere.

I myself took no immediate charge, but moved constantly about, inspecting and consulting and putting right, as far as I could, what was or seemed to me wrong. I invited suggestions from my subordinates, and, where these appeared to be good, acted upon them.

The schemes for village relief, poor-houses and works were all on one plan, and the instructions regarding them were issued by me. I allowed officers, on reference to me, to make modifications where local or other circumstances rendered it advisable, but not without first obtaining my consent. I did not allow any work, except of a petty nature, to be taken up without first consulting me.

I interfered with no officer's movements and left him as much as possible to go where he thought that he was the most needed, and where he could make any arrangement with the Department of Public Works officers to carry on or overlook relief-works in his charge, I allowed it to be done without reference. I did not have anything to do with any minor appointments; I merely required my sanction for the appointment of superintendents on works.

The tahsildars assisted the divisional officers, who had subsequently the special relief officers under their orders to inspect, check accounts, pay on the works, &c. Each divisional officer was responsible for the accounts of his division, and was supposed to send them in every week to headquarters, but notwithstanding constant pushing many delayed very much. The chain of responsibility was maintained by divisional officers being in constant correspondence with those under them by frequent inspection, weekly statements and monthly reports, and by the initiation of any important change or measure without previous sanction being forbidden. My orders were, however, that every officer must in an emergency act at once as he thought best and report afterwards.

I was at first controlled a good deal in matters of detail, but afterwards I was able to do very much what I thought best, there being general principles laid down for my guidance. I had to make constant reports to the board and afterwards to Government; where I thought it necessary I acted at once and reported what I had done, and when I wished to make any considerable change I wrote and obtained orders. I might reduce or add to numbers, move one officer from one part of the district to another, put him on what duty I thought fit, order any particular form of accounts, statements, or returns other than those required by the board or Government, close a work, and so on; but I could not alter scales of wages, direct a work costing more than 2,000 rupees, or without an estimate to be taken in hand, alter certain forms of relief, order tools and plant, &c., without permission. I might dismiss, without reference, any famine officer, not permanently in the service of Government, but I could not appoint those of superior rank. I am bound to say that all through I had but little to complain of in regard to interference by higher authority; there were some points in connection with orders which I received in which I did not agree, but it was my duty to obey instructions and I did so, remonstrating where I thought I justly could.

Mr. Grose.—The civil administration of the district is not strong enough to bear the unusual strain of a famine. I had an additional sub collector and two additional assistant collectors at the beginning of the famine, and this was sufficient, except so far as works, which wanted professional supervision, were concerned, till the time came when the famine was at its worst, and then more European supervision was badly wanted, especially for gratuitous relief. We got it afterwards, but the Bengal famine officers did not come till the hardest strain had passed.

The area of the district of Nellore is large, 8,402 square miles. It is too large for a collector to be well acquainted with every part of it, but the sub-collector is almost a collector, and is intended to be so. Comparatively few things that go on in the sub-division come to the collector's notice, and I do not think it necessary they should. The work in ordinary times, though sufficient, is not oppressive.

The sub collector is the collector and magistrate of the zemindari divisions of Podile and Darsi, and the taluks of Ongole, Kundukur, and Kanigiri. Within this tract he exercises the same powers as a collector and district magistrate, but he is subject to the collector's general control, and has to refer to him all points not previously decided or connected with the appointment, dismissal, or punishment of the sub-division sheristadar or the tahsildars of his taluks. There is a head assistant collector who is also a 1st-class magistrate, and has the whole charge of three taluks, viz., Kavali, Udiagherri, and Atmakur, and magisterial charge of the portion of the Nellore taluk, north of the Pennar river. There is a deputy collector, who is also a 1st-class magistrate, and has the whole charge of the zemindari divisions of Polur and Vencatagherri and the taluk of Rapur, and magisterial charge of Gudur. The head assistant collector and the deputy collector are experienced officers, but are completely under the collector's control. There is an assistant collector who is a 3rd-class magistrate, and who assists the collector, but he cannot be put into direct charge of any portion of the district, or made of much use in any way until he passes certain examinations. Thus the collector has revenue charge of Nellore and Gudur, and the magisterial charge of the part of Nellore south of the river which includes the town. There is a treasury deputy collector who acts as a personal assistant to the collector, and conducts the transactions of the treasury. This staff is of sufficient strength for ordinary times, and the only improvement I can suggest is an exchange of divisions between the head assistant collector and the deputy collector.

My official relations with the Department of Public Works officers have been unexceptionally good.

Most of the higher native subordinates, such as tahsildars and deputy tahsildars, showed a fair amount of energy, capacity, humanity, and physical activity during the famine; but nearly all the underlings took tribute from the relief money which passed through their hands, and did nothing more in the struggle than they were distinctly told to do. The management of works and camps by native revenue officers was, however, seldom good. In the one case they were without

Ch. III. Qn. 40. — Madras.

professional knowledge; in the other they were wanting in habits of compelling cleanliness and discipline, and perhaps in the courage to act outside the law where that was necessary.

Every week reports were submitted to me from all tahsildars and deputy tahsildars regarding the state of the season and prices. From time to time reports came from divisional officers to the effect that relief-works or camps were wanted here or there. If the reasons for the works were good, I either sanctioned them or submitted them to higher authority, according to their probable cost. With regard to relief-camps, the want of administrative and medical supervision pressed at once, and I had to decide that, as a rule, there should be but one camp in a taluk, though in exceptional cases there might be two. The sites were then fixed by divisional officers in communication with me. I and each divisional officer received weekly reports from the village inspectors and passed the necessary orders thereon. When a work had been sanctioned, the divisional officer arranged how it should be carried out till the Department of Public Works took charge. Weekly reports came to me from all relief-works and relief-camps, and enabled me to secure uniformity. With regard to both works and camps rules were issued by me and by higher authority from time to time as to points in which uniformity was necessary, and so long as those rules were observed divisional officers were independent.

Similarly certain rules which will be found in orders of the board and Government were binding on me, but the discretion allowed was sufficient.

Mysore.

MYSORE.

Colonel Sankey.—I have sufficiently before adverted to most of the points here dealt with. As to the inquiry how far I was myself controlled in the relief administration I will frankly say that, while I was, as I believe, prejudicially controlled, and my motives and objects misapprehended, I have no desire to go back on any of these circumstances, further than as may be necessary for throwing light on the immediate object of the Commission's inquiry, and for helping Mysore, to which I owe so much, to bear its next famine trial better than it has done its last. This I believe it can do in the manner I have endeavoured to point out (see Section VII. of the *printed Collection*), if enlightened views prevail, but not, I should fear, otherwise.

Mr. Ricketts.—I consider the civil administration of my district strong enough to bear the unusual strain of famine, provided of course temporary additions be made to the existing machinery to meet temporary exigencies. My district is of very convenient size. My official relations with the officers of the Public Works Department are such as are most conducive to the carrying on of relief works. There was some difference of opinion at one time, and there is probably difference of opinion still, but principles being now laid down the official relations are harmonious and tend to beneficial results.

My native subordinates were sometimes wanting in energy, capacity, humanity, and physical activity in carrying out relief operations, but there were some notable exceptions.

By the end of October 1876, the famine hitherto disbelieved by many, had fairly set in, and relief works were commenced, and then followed the opening of kitchens; the former to provide able-bodied people with employment, and the latter to distribute food gratuitously to such as were sick or emaciated and were physically unable to work for their own support. In organizing the above works and kitchens special assistance was obtained from the judicial assistant commissioner, munsifs, and their establishments. The services of certain upper subordinates of the town and cantonment and district police were also utilized. Further, a number of officials of the district and Treasury Offices were also deputed to special famine duty, their places being filled up by temporary substitutes where absolutely necessary.

Ch. III Qn. 41.

Question 41.—System of Correspondence and chain of Official Responsibility.

Through what channels have orders relating to famine relief reached you from the Government? If references were sent by you, and orders received by you from the Government or its representative in the Famine Department direct, state whether you think that course operated well, whether the necessary business was rapidly conducted with consistency and precision, and with due attention to the exigencies of special circumstances and localities, &c. Do you think this course best, or that the work would have been more effectually done had there been an official (whether Commissioner or Member of the Revenue Board, or by whatever name called) who should have been in administrative charge of a group of districts, and would thus have become acquainted with their wants and circumstances by personal inspection? If, on the other hand, you received the orders of the head of the Government through any intermediate authority, state if, in your opinion, there were any disadvantages attaching to this course, such as weakening the sense of personal responsibility in the local executive officers, delay in replying to references, or want of uniformity of method in different parts of the province, and so forth.

Punjab and North-Western Provinces.—Government corresponded with collectors through the commissioners except in emergent matters.

Bengal.—Special Famine Commissioner not approved. Government should communicate in emergent matters direct with the collectors.

Bombay.—Orders were communicated to collectors direct by the Secretary to Government, P. W. D. (Sir M. Kennedy). This plan is generally approved.

Madras.—Thirteen gentlemen (Europeans) have replied.

The evidence is entirely in favour of the control of famine relief operations being vested in one central authority issuing its orders direct to the local officers and not through the Revenue Board.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—Occasionally direct from Government, and most frequently through the commissioner of the division. No references were sent by me direct to Government and its representatives in the Famine Department. Except in cases of emergency, all orders should be sent through the commissioner of the division, a course which has not by any means weakened the sense of my personal responsibility or

caused any unnecessary delay in replying to references.

Mr. Gardner.—Formerly the magistrate and collector was on many matters in constant and direct communication with the Secretary to Government, though usually in a demi-official form.

This practice, however, has of late years been disused, and all communication between district officers and Government discontinued except through the commissioner. On most subjects connected with famine, and all subjects connected with relief work, the commissioner does not correspond directly with the collector, but communicates to the collector through the secretary to the commissioner, who is the executive engineer, and the collector must address in reply the same officer, and not the commissioner direct. I consider the result of this circumlocution to be detrimental in many ways.

BENGAL.

Mr. Kirkwood.—I would, in famine matters, have the organisation of the official staff up to the collector regulated in the manner already stated in answer to questions 31, 40, and elsewhere. Government orders should be communicated to the divisional commissioner and, through him, to the collector. The collector, should correspond with and report to the commissioner, and the commissioner should correspond with and report to the Government. The commissioner should be responsible for the division, the collector and his relief officer for the district, and the local Government for the province or presidency. Where there is a divisional commissioner I would have no appointment such as a famine commissioner to a division. Such an appointment was made to the Patna and Rajshahaye divisions in 1874, and, judging from all I have heard, it did not work well. The position is anomalous: the commissioner of the division must be still really responsible for his division, and yet the famine commissioner would be almost independent of him, and would correspond direct with Government. I would prefer giving the commissioner a personal assistant, of the standing of a junior collector, to whom he might entrust as much or as little of famine work or of the ordinary work as he may desire, the commissioner being solely responsible. Such a personal assistant would correspond with district collectors only in the commissioner's name, and in all matters of important orders, or the award of praise or blame, under the commissioner's own signature.

Where (as in Madras) there are no divisional commissioners I think there should be famine commissioners temporarily employed, each of whom should superintend the famine operations in three or four districts, and be the channel between the Government and the district collectors. These famine commissioners might generally be appropriately selected from the senior collectors.

The remarks I have above noted are drawn mostly from what was done in Bhagulpore (1874).

Those arrangements seemed to work well.

Urgent references should, whenever expedition is a main consideration, be often addressed direct by Government to the district collector or the district chief relief officer, who would then reply direct to Government, sending at the same time copies of the correspondence to his immediate superior for information.

BOMBAY.

General Wilkins.—All the orders of Government were received from the Secretary to Government in the Public Works Department, Major-General (now Sir Michael) Kennedy, under whose direction all the business connected with the famine was conducted. I consider that the course adopted not only answered well, but was the very best which could have been devised. General Kennedy's acquaintance with the country, and his connection as head of the Public Works Department with the projection of works required to be inaugurated for the purpose of giving relief, enabled him to form his own opinion without consultation or correspondence on every project which was submitted to Government. Hence there was no delay in the due transaction of business, saving what occurred in the transit of the post and the brief time General Kennedy required for the record of his opinion and orders in each case.

Every order of Government relating to the famine generally, and to the districts of the southern division in particular, came direct from General Kennedy's office to me for promulgation to the seven executive engineers of the division. The sanctions and orders, with or without subsidiary instructions as occasion required, were disposed of by me daily as they arrived.

To the question put in the 41st paragraph relating to this subject, I unhesitatingly assert that the administrative work would not have been so well performed by a special commissioner placed in charge of several districts.

Mr. Spry.—Government resolutions and orders relating to famine have reached me direct from Government through the Secretary, Home Department. Ordinarily speaking, references sent by me would go through the commissioner of the division; but during the famine, in all emergent matters which would not admit of delay, I sent references direct to the Secretary to Government, only sending a copy to the commissioner for information. The commissioner having his head-quarters at Belgaum, it would have caused great delays had I always communicated with him direct. By communicating direct with the Secretary to Government, business was rapidly conducted with consistency and precision. The Secretary to Government invariably replied at once, so that by direct communication I often got orders almost before, under the ordinary routine, the communication could have left the commissioner's office.

In matters which did not require prompt settlement, I always referred through the commissioner.

Mr. Moore.—Through the commissioner and direct, a copy of the latter order being sent to the commissioner. I think that the system carried out during the famine was the best, viz., of all general orders being issued direct by the representatives of Government in the Famine Department. All the orders were clear and precise, and this seems far better than if orders had been issued by different officers in charge of different groups of districts. The system adopted in this presidency worked admirably.

Ch. III. Qn. 41.

Madras.

MADRAS.

Sir W. R. Robinson.—I have no doubt whatever that the defect noticed in third query of this question, viz., the absence of a responsible and well adjusted civil itinerating inspectorate—for two or three districts—throughout our famine area caused much drift and administrative shortcoming during the whole period of our distress.

An effective civil inspectorate should in future be constituted and maintained throughout the campaign; and alongside it a sanitary inspectorate over perhaps wider ranges. The latter was organised about May 1877 and proved most useful for many months. It was perhaps too soon given up towards the end of the year.

I myself greatly prefer the guidance of a consultative body in the general management of grave exigencies, and the deputation of members of such bodies when local inspection or direction are needed. So far as possible members of the Board of Revenue are the proper advisers, inspectors, &c., of local administration; and by adding a member or two to the board, two or three members may always be on tour or on such urgent duty as properly fell to them during the late exigency, until laid aside in September 1877. No future famine administration should be attempted without a well constituted superior civil inspectorate.

Mr. Longley.—Up to September 1877 the orders reached me through the Board of Revenue. After the Famine Dictatorship was established I received them direct from Government. I consider that in an emergency like the famine of 1877-78 the latter is the more preferable course. The communication being direct, business is conducted, so far as my experience goes, with far more despatch than when filtered through an intermediate channel. I am averse to having any officer between the head of a district and Government. The head of a district should communicate direct with the *Government*, and be personally responsible to the Government alone.

Mr. McC. Webster.—I think the arrangement by which district officers corresponded direct with Government in the Famine Department and received orders direct operated well, and it could not, I think, have been improved upon.

Mr. Price.—First, through the Board of Revenue; second, through the additional secretary to Government in the Famine Department.

I consider that the second named of these courses was decidedly the better. There was practically but litle, if any, use in orders going through the board, or in references being made through them. The board had frequently to write nothing more than "submitted for the sanction of Government," "submitted for the orders of Government," "the collector's proposals are approved." There were of course cases in which local knowledge, possessed or obtained by the Board of Revenue, helped to elucidate remarks of collectors, but these were very few in number, and I found corresponding directly a decided improvement. Replies were more quickly received and business, generally speaking, more raipdly and satisfactorily disposed of than under the plan which held in the earlier stage of the famine. I do not, from what I have seen, think that a commissioner over a group of districts would have been of any practical use. He could not, unless well acquainted with them before, have seen, though he travelled night and day, very much of what was going on, and he would not only have restored the disadvantage of correspondence which could easily be disposed of at once, having to pass by a round-abou course to Government, but would have probably tormented collectors with his own hobbies on the subject of famine management which might not be in accordance with the views of Government and would in that case have been set aside as soon as they reached that authority, thus giving extra work. My experience is that the fewer masters one has the easier it is to do work of all kinds. I do not think that during the period that correspondence went through the board there was any breaking of the sense of responsibility created thereby; there was delay in replying to references, but this was unavoidable. As regards want of uniformity of management I can say nothing.

Mr. J. G. Horsfall.—Clause 3.—I prefer direct communication with Government through the famine secretary, but would leave it to Government to appoint special commissioners to visit famine districts, to see that their orders are understood and obeyed. A commissioner in charge of several districts would entail but little less delay than the Board of Revenue did.

Clause 4.—When references were made through the Board of Revenue there was necessarily great delay.

Mr. Grose.—I received orders at first through the Board of Revenue, and afterwards direct from the Governor; but I cannot say that the transactions in this district were affected by the change, either for good or evil. My own opinion is in favor of a board as against commissioners if we cannot have both.

Mr. Oldham.—Before October 1877 the time ordinarily taken in obtaining an answer to a reference from Government by a divisional officer was two months. As a result, up to that date, subject to the general orders my action in relief administration was altogether uncontrolled and discretionary. I believe direct correspondence with Government by district officers to be the best course for famine administration.

Captain A. Awdry, R.E.—The ordinary channel through which famine orders have reached me has been through the Public Works Department; this I think was needless and wasted time. During famine all papers relating to famine should, I think, go direct to, and be received back directly from, the Famine Department without the intervention of the secretariat, with which the officer usually corresponds. I frequently—in fact generally—find that the Revenue officers have their orders from Government some days before I get mine, because mine have to be reprinted and issued from the Public Works Secretariat, while the Famine Department is a part of the Revenue Secretariat.

Mysore.

MYSORE.

Colonel Sankey.—As Chief Engineer and Secretary, my orders came direct and personally from the Chief Commissioner; and where both officers have been carefully selected for their respective posts, I can conceive no better arrangement. I have already ventured at some length to show that the appointment of an officer as Famine Commissioner for a Province, or analogous appointments for Divisions, are not desirable. Great strengthening of all lower grades, and particularly in the Public Works Establishment, would be essential, as also extra Session Judges, Magistrates, Police, Relief Officers, &c. The routine of administration generally should not, I think, be in any way changed.

Mr. Ricketts.—Up to September 1877, I received orders relating to famine through the ordinary channels. The intermediate authority was in fact the commissioner of the division, and the consequences, among others, were very grave delays and want of regard to special famine exigencies. There is no

doubt but that at famine time a special famine department is required whose sole time and energies should be engaged on the campaign; then matters are settled with rapidity, consistency, and precision, and the district officer takes heart. In fact all take heart, and real, active, and beneficial work is the result.

QUESTION 42.—FINANCIAL CONTROL AND THE AUDIT OF EXPENDITURE.

Under what financial control were the operations placed as to the supply of funds and authority to spend money or sanction and commence works? State generally the system adopted, and what you think of it? Mention if any irregularities or frauds took place in the application of money, or were supposed to have taken place, and how and to what extent? Is it anywhere currently reported that any persons of any class engaged in the relief operations have become subsequently enriched, or is there reason to think that peculation or malversation were rare and exceptional? Were sufficient means available for checking the expenditure and rendering and auditing the accounts? How was this part of the operations conducted, and with what general results; has the whole of the outlay been satisfactorily accounted for or not, and if not, what deficiencies have arisen and in what manner, and how have they been dealt with?

Punjab and North-Western Provinces.—The district engineers disbursed funds and accounts for them under the rules of the P. W. D., which audited the expenditure.

Bengal.—In Behar the expenditure and accounts were in the hands of the district officers, and there was some confusion; but the peculation is not held to have been large.

Bombay.—Financial control was exercised through the ordinary agency of the P. W. D. of Government.

Madras.—Seventeen gentlemen (Europeans) have replied.

The statement of Mr. Longley explains briefly the system of financial control adopted in regard to the expenditure of relief funds, and the instructions regarding relief operations issued by the Board of Revenue with their proceedings, dated 18th December 1876, No. 3208, treat of the same subject. The evidence shows that although there were many instances of peculation and petty embezzlements, which are almost inevitable in operations conducted on so large a scale, there were none of extensive frauds.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—The district engineer was furnished with funds by the accountant-general's credit orders. All disbursements were made by the district engineer or under his orders, and accounted for under the rules of the Public Works Department. As far as I am aware no irregularities or frauds have taken place, neither have any of the persons engaged in the relief operations become enriched.

The means available for checking the expenditure and rendering the accounts have been explained in answer to questions 7 and 8 of section 1 of chapter III.

The accounts have been audited under the regular rules of Public Works Department. The total expenditure that has occurred on relief works up to date has been Rs. 82,486, of which Rs. 71,166 has been audited and accounts have been rendered by the assistant engineers for the balance.

Mr. Atkinson.—(*a.*) Same as the ordinary course, through examiner, public works accounts.

(*d.*) The elementary public works forms, in my opinion, failed entirely in the Bengal famine, and led to great peculation. A new form was prescribed there, in which it was intended that a certain party should count the labourers or measure the task-work, another should present this statement to cashier, and a third (the cashier) should pay the amount. It was intended that the interest would be thus divided and a good check enforced; whereas it occurred, as I pointed out to superintending engineer and examiner, that frequently all three parties were combined in one individual, and he gave the orders on himself and paid himself whatever his ideas of honesty or dishonesty thought proper. The system of daily report, day-book, and imprest account for recording transaction of money failed entirely, as far as my experience went. In ordinary times and work, as I have always maintained, these forms are most inadequate for the purpose for which intended, and during pressure and famine nothing more unsuitable can be imagined. All subordinates had imprest accounts, and it was matter of frequent occurrence to find simply item after item written thus:—

6th -	- D. L. -	- Rs.	1,092	4	0
7th -	- D. L. -	- „	868	10	0
	&c.		&c.		

for which there was not the smallest check or guarantee of accuracy. The public works forms of accounts, as prepared in executive engineer's office and posted by examiner, are probably the most complete and appropriate that can be invented, but the whole of this depends on the initial forms, and nothing more fictitious and devoid of check and accuracy than the daily report and day-book can be imagined. For numbers of men, details of expenditure, quantities of work, there is no check, no proof that the figures are correct; yet on this a finished abstract is made in the end, but based on fiction entirely. There is no proof that the outlay was actually made, or if made, that it can be represented by a corresponding amount of work accurately measured by a responsible party.

BENGAL.

Mr. Worsley.—As district officer I exercised unlimited power in spending money and opening relief works. Petty frauds at the works, no doubt, took place. I have not heard of any class engaged in the relief operations having become subsequently enriched. Sufficient means were not available for checking the expenditure and rendering and auditing the accounts. Rough checking of expenditure and accounts was all that was possible under the circumstances. The outlay generally was satisfactorily accounted for on paper, and a fair amount of work was extracted from the labourers.

Mr. Hodgkinson.—I am unable to state definitely with whom the financial responsibility rested for the supply of funds for famine relief in Sarun during

CH. III. QN. 42.

BENGAL.

1874-75. The collector had only to ask for the money, giving his reasons, and he got it. Advances were made for land improvements or for the purchase of grain to almost every applicant whose security appeared sufficient. A very large portion of these advances was not spent on the purpose for which they were obtained, but what portion was was never, I believe, ascertained. In 1874 I was informed of one case by Mr. Wright, the subdivisional officer of Sewan, in which a man who had taken some Rs. 300 or Rs. 400 advances nominally for wells had, undoubtedly, really borrowed it for a wedding, in which the whole of it was spent. Most of these advances have been recovered, but the loss of interest to Government and the trouble and expense of recovery have been considerable. There can be no doubt that peculation went on to a very considerable extent. Gold mohurs usually procurable in the bazaar for about Rs. 15 were at one time with difficulty obtained for Rs. 17 or Rs. 17-8; and the popular reason given for this extraordinary rise in their value was that remittances in hoards of gold mohurs were particularly affected by the dishonest mohurirs on relief works and storehouses. It is not in the accounts that the peculations are discoverable, though there are many points which have not been probably now, or never will be, cleared up; many are evidently errors from carelessness and inadvertence, which can never be entirely absent when work has to be done at high pressure, and sometimes by not very competent men. But advantage has, in some cases, been taken of these mistakes and peculations committed, though strict proof of them can hardly now be given. Money was mostly made by subordinate officers in relief works, over whom, working on the daily-wage system, proper supervision was impossible. There have been prosecutions arising out of peculations during the relief operations.

Mr. Finucane.—It is currently reported that mohurirs, contractors, and others became enriched during the relief operations in Behar. The best way to check such malversations is, I think, to have a large and trustworthy, though expensive, establishment organised, and on the spot, at the earliest stage of famine.

Mr. Magrath.—The financial control as to the money actually disbursed was practically in my hands. Government, of course, gave general sanction to my action, but any system of reference for petty sums of money, such as exists in ordinary time, is impossible. My officers indented on me for money for which they accounted, giving me a running account of the heads under which it was spent. I was responsible that the money was properly spent, and no difficulty was experienced in making up my accounts to the satisfaction of Mr. Taylor of the Financial Department, who inspected my office and accounts. Some of the subordinate public-works officers were suspected of peculation, but nothing was ever proved against them, and this took place mostly after the system of paying by measurement was introduced, to which no possible check exists. A number of minor officials were caught cheating (when grain payments were introduced) and punished. I remember no one in my subdivision who had anything to do with cash who enriched himself at Government expense. The expenditure on all works under them was checked by the circle officers. The accounts were made up after I got my account staff at head-quarters, and audited by a competent financial officer at Durbhunga. Every day the subordinates in charge of special works reported the number of men, women, and children; and if any returns were suspicious, the circle officer, or one of his assistants, checked the numbers. When measurement came in, difficulties were enormously increased, as measurement is such a lengthy process. Grain payments, as I have said, are peculiarly susceptible of peculation, and several men were caught who had made away with a large quantity of grain. On the whole, however, peculation was marvellously small, and I believe most of the guilty were caught and imprisoned.

BOMBAY.

BOMBAY.

General Wilkins.—The financial control of the famine relief works was that in force in the Public Works Department in ordinary times. All sanctions for the expenditure of money were accorded by Government. Works accounts were kept in the usual public works forms, and audit rested with the examiner of public works accounts.

Mr. Spry.—Plans and estimates for famine relief works were drawn up by the executive engineer, and then submitted by me for sanction through the commissioner Southern Division. The sanction of Government used to be given promptly, and then the works were commenced as necessity for them arose. It occasionally happened that the necessity arose before the sanction had arrived, and then I, on my own responsibility, would direct the commencement of a work, reporting that I had done so.

The system was the only one which could have been adopted, considering that no scheme for famine works had been thoroughly matured and prepared at a time anterior to the famine breaking out. Had such a scheme existed, our difficulties would have decreased materially.

Besides the above, Government gave me at different times on application grants, called discretionary grants, for expenditure on relief houses and on people not able to go on works. These grants amounted in the aggregate to three lacs of rupees. This money was disbursed to the assistant and deputy collectors in charge of talukas on requisitions made by them, and they were held responsible for the proper application of the money. This system worked well enough.

As regards relief works, I have not heard of any irregularities or frauds, except petty ones, having taken place. As regards the discretionary grant, so many people, such as circle inspectors, village patels, &c., had, of necessity, to be trusted with money that it was impossible to avoid a certain amount of petty pilfering, but there was so much supervision on the part of superior officers that there was but little chance of frauds on a large scale. In the cases of petty frauds which have been discovered, the delinquents have been criminally prosecuted. To show that the frauds could not have been of a serious nature, I may state that out of the three lacs of discretionary grant above alluded to I have accounted for the whole except Rs. 322. I have not heard any reports about persons of any class engaged in relief operations having become subsequently enriched, and I have shown above why I consider peculation exceptional.

Were I again to have the misfortune to be engaged in superintending relief operations, one of the first things I should do would be to very materially strengthen my head-quarters' account office, so as to admit of prompt checking of expenditure and auditing accounts. Not having had previous experience, I did not, I now think, strengthen it sufficiently. My taluka account offices were comparatively more strengthened than my head-quarters. I should, in fact, have an entirely separate Famine Account Department. The duty of winding up all the numerous accounts has not yet been concluded, but is being so gradually. Some of the accounts have been closed and satisfactorily settled, others only require time. No actual deficiencies which cannot be accounted for have yet come to light.

MADRAS.

Mr. Longley.—The general financial control was first vested in the Board of Revenue, and since September 1877 in Government alone. The appropriation of State funds to any particular object in connection with relief vested with the same authority, who had also the power to sanction funds for relief purposes in all its recognised forms. Within and up to the extent of the amounts so sanctioned the district authorities were authorised to make disbursements, except in respect of works in regard to which certain limitations were imposed, viz., that no work should be commenced without previous sanction by competent authority or properly-framed estimate, the collector being competent to sanction works up to Rupees 2,000, the Board of Revenue having the power to sanction works between Rupees 2,000 and Rupees 10,000, and Government all above this latter amount; and subsequently, after the management of relief operations was solely vested in Government, and when the numbers on relief declined, the power of the collector was reduced to Rupees 500, and eventually to Rupees 200; all estimates above these amounts being sanctioned by Government. In all cases where it was not possible to frame estimates owing to urgent need for relief, provisional sanctions were obtained for incurring outlay on works in anticipation of sanction to regular estimates. Periodical lump assignments of funds were obtained from the Board of Revenue (when they had the management of relief operations), and subsequently from Government; from these assignments grants were made to divisional officers, talukwar as required on indents submitted by them. Within these limits the divisional officers had authority to distribute relief in its various forms, and by the agency organised for the purpose each village head or each relief inspector was supplied with funds on his indents on the taluk. In the case of works carried out by the Department of Public Works funds were obtained on credits from the examiner of Public Works accounts, to whom the entire audit of expenditure on relief-works was entrusted.

Irregularities were frequent, and detection was not always possible. Under the system of supervision and check, as described in connection with Question No. 40, they could not have existed to a very large extent. The irregularities were committed in the shape of short payments, *i.e.*, payments at rates below the authorised ones, entries of payment to persons dead or absent, and on items of expenditure not actually incurred.

It cannot be said that any *particular class or classes* of persons engaged in the relief operations became enriched, but there is no doubt that many were better off for the famine, and there is not the slightest reason for supposing that petty peculations were exceptional.

Sufficient means, except in the early stages of the famine, has been available for checking expenditure and rendering and auditing accounts. The inspecting agency employed (*vide* Question 40) exercised a close check on the outlay, but in the earlier stages more superior* supervision was necessary to prevent irregularities being committed by the famine subordinates. A special establishment, consisting mostly of trained accountants, has been entertained to classify and audit the relief accounts and bills.

This important branch of work in connection with the famine relief has had its due share of attention and been conducted in a very satisfactory manner, but owing to magnitude of work and the unusual strain on the taluk staff, which was not strengthened to the proportionate degree to meet this extra demand, the audit could not be completed earlier, but there is every likelihood of the work being soon finished. Vouchers and accounts *are* available for a great portion of outlay; but, as the process of assortment and audit of accounts is still going on, it is premature to say what proportion of the expenditure will be left unaccounted for, but it is certain that it will not come to any appreciable amount.

Mr. J. G. Horsfall.—In this district relief-works were carried on under the Department of Public Works.

Clause 2.—Solitary instances of peculation with regard to village dole were reported, and in one instance a village munsif was convicted of such peculation to the extent of Rupees 50.

Clause 3.—It is not reported anywhere that any class of people engaged in relief operations became rich.

The few solitary instances of peculation brought to notice show that such must have been comparatively rare.

Clause 4.—Yes.

Clause 5.—As the relief-works were entirely under the supervision of the Department of Public Works in this district, the Revenue Department had nothing to do with the audit of expenditure on them. The audit of the gratuitous relief expenditure was conducted thus:—Advances were made to the tahsildars and deputy tahsildars, who distributed the money to village munsifs. The latter actually spent it and prepared vouchers as they paid. The vouchers were duly acquitted and sent to the tahsildar or deputy tahsildar, who submitted them to the divisional officer. The latter then examined them, and, if he found them correct, prepared and forwarded bills with the vouchers to the collector, with a certificate that all reasonable means were taken to check the expenditure. The bills and vouchers were again examined in the collector's office, and the former sent on with his countersignature through the Board of Revenue to the accountant-general's office, where they were finally adjusted to the proper heads and the expenditure admitted. The audit of expenditure in the Revenue Department was conducted by the ordinary establishment, assisted by two special auditors in the collector's office, and by one each in the sub-collector's and deputy collector's offices. Advances were also made to some medical and other officers for expenditure on account of famine relief-camps and hospitals. These officers accounted for these sums by vouchers obtained from parties from whom articles, &c., were purchased. In this way all the expenditure has been satisfactorily accounted for, except a small sum of Rupees 46 embezzled by some village authorities, who were prosecuted and punished by the magistrates.

Mr. Price.—At first there was no financial control at all. Money was drawn in lump sums or from the general funds without sanction. Every one did what was right in his own eyes. A general authority was given by the board to open relief-works, and in some cases works which could be gone on with or taken up were indicated and permission to undertake them was given. It mattered not in the early period of the famine whether there was an estimate or whether it was sanctioned or not. It was enough that work was required for the people, and, whatever it was, it was taken up. This state of things was soon altered, and the next step was that no work was to be taken in hand without an estimate and previous sanction; that no collector could sanction a work beyond Rupees 2,000; that money could, for works, be drawn from general funds up to the amount of sanction, and that for gratuitous relief should be drawn, as required, on a credit given at his discretion by the collector for each taluk, the money being debited to "Famine advances recoverable." The last stage was that Government insisted upon nothing being taken up without an estimate and sanction; that they cut down the sanctioning powers of collectors to Rupees 500;

* This superior European agency was furnished in September 1877.

that funds for works were to be drawn only on credits given by the examiner of Public Works accounts, on application from collectors, who had to account to that officer in the usual Public Works Department forms; and that all gratuitous relief money was to be drawn on a credit sanctioned by Government each month on an estimate furnished by the collector, the bills being sent in to the accountant-general.

I think the last-named system, as regards drawing money, about as good as could be found. I consider that as regards works there was a little too much red tape, and a great deal of certifying, writing, and so on, in which there was not the slightest use as no one could ever know whether what was stated was accurate or the reverse. Where a sudden emergency arose I should not hesitate, any orders to the contrary notwithstanding, to draw money from the general funds in my charge. I would not limit collectors in the way in which Government did; I consider the original limit of sanctioning power better. Having to write regarding petty estimates only increased correspondence.

Irregularities and frauds took place in the application of money, but I cannot state to what extent; I cannot give particulars of cases in the Cuddapah district. The most general form was putting down on paper far more coolies than existed, and accounting for the resulting short work by the statement that the coolies were too weak to do the proper task, or that they had refused to labor. Another mode was taking so much out of each cooly's pay, or making each man, woman, and child taken on give a *douceur*. We detected several men in such practices, and they were tried and punished. In this district I know of no frauds having been committed; a criminal charge was brought against a Mr. Love, but it broke down; I believe that he did embezzle a comparatively small sum, but a mess was made of the case, which occurred before I joined. It was currently reported in the Cuddapah district, and is here also, that many persons who were connected with famine operations have become enriched. I know myself of three or four cases in the upper ranks of natives, but it was of no use trying to get anything against them. Plundering, peculation, and fraud were, in my opinion, rife. What could be done in the way of checking was done; but the European officers of Government were too few to, until reinforced, cope with a host of acute natives, the majority of whom had but the one thought. The sessions judge unfortunately had very peculiar ideas on the subject of famine and the people connected with the management of it, and he very frequently, in appeal, quashed convictions for fraud which we all thought clearly enough established. The consequence was that things came to such a pass that, excepting in the most glaring cases, we simply turned the offenders away and took what salary was due to them. One native officer of very high position made, I believe, a good deal of money before I put it out of his power to do so. I could not prove anything, and no one would come forward to give evidence in a formal inquiry. I heard, however, that at the very worst period of the famine he was having jewels and ornaments made. I myself saw some of the latter. There were at first not sufficient means available in the matter of accounts. In the Cuddapah district, up to the beginning of February 1877, there was, I may say, practically no checking of expenditure or rendering of accounts, and there was no audit at all until the end of April, when a special establishment was sanctioned. The check upon expenditure was made upon weekly returns of amounts spent upon works, gratuitous relief, &c.; but there were for a long while but two divisional officers from whom these statements could be regularly obtained. We afterwards procured them from the others, but, until this was effected, there was nothing but the total expenditure for works and relief to check. There was certainly some considerable excuse for this. Relief had been begun in a hurry and under great pressure, no definite instructions had been given, and conflicting orders were being issued; nothing was ever said about expenditure. The cry was "save life," and the directions were "take on every one applying for employment." The consequence was that when this kind of thing was suddenly checked and accounts and system demanded, the staff was too small, with rapidly increasing numbers on relief, to work up the accounts, and they were at one time months in arrears.

Mr. Oldham.—The system laid down for financial control, for the sanction to works, and authority to spend money was entirely over-borne by the pressure of the famine. Funds never failed, and only divisional officers were entrusted with a discretionary expenditure of them, and this only in practice. Nominally they were not so entrusted. Under the circumstances I cannot see how this could have been otherwise.

I know of no cases in which irregularities or frauds in the application of money to any large extent have taken place. I have heard of two such cases, one of which is, I believe, baseless, and the other (a deficit in a tahsildar's accounts variously estimated at Rupees 76,000 or Rupees 67,000) is still under inquiry.

Nor is it anywhere currently reported in this district, to my knowledge, that any persons of any class engaged in the relief operations have become subsequently enriched.

On a minor scale peculation and malversation were perhaps the rule, not the exception.

The means for checking the expenditure and rendering and auditing the accounts were, during the pressure of the famine, insufficient. This part of the operations was, with one or two exceptions, conducted by special establishments, months after the expenditure had been incurred.

The result has been that, except in one taluk, the expenditure has been accounted for. Inconsiderable sums have been shown as deficits and as irrecoverable balances in cases of ascertained thefts and in default of accounts on the death of disbursing agents, and have been struck off under the orders of Government. In some taluks the accounts are completely satisfactory; in others less so, though in these it would be impossible to reject them, although some may be regarded with suspicion.

But even when describing an account as completely satisfactory its form only is alluded to. Unless when the actual expenditure came under the personal supervision of a superior officer there is no guarantee that an account, however satisfactory in appearance, does not cover a fraud. The most easily perpetrated frauds were those which could be covered by apparently good accounts.

Captain Awdry.—The whole outlay has been accounted for in many cases; the outturn has been perhaps one-third to a half less than what would be turned out in ordinary years for the money.

MYSORE.

Colonel Sankey.—It will have been observed from my *printed Collection* that the only funds I had at disposal were those under the regular Budget grant, and that these were somewhat curtailed, and were threatened to be dangerously interfered with. I am happy to say that not even a breath of scandal attaches to the Public Works subordinates during the late famine trial. No relaxation in the rigid methods of paying and accounting usual with the Department took place so long as I remained at the head of the Department. Nothing could have exceeded the intelligence and devotion of all officers and subordinates; and I cannot speak

in too high terms of the courageous and able management of the Department while under the direction of my friend, Colonel Johnson.

Mr. Ricketts.—My opinion is that peculation and malversation were not of so common an occurrence as some people suppose, and I have heard of no current reports of persons engaged in the relief operations having become subsequently enriched. He would be a rash man who said that there were no frauds. Frauds were doubtless committed and are being committed (as supported by detection) up to the present time. Fraud is not to be detected by the mere multiplication and auditing of accounts. In fact in many such cases there are insidious suggestions of frauds by underlings or others in order to gain the confidence of their superiors to be used for their own dishonest purposes thereafter. In fact, with this suggestion of fraud in others by those themselves fraudulent, added to actual case of fraud (mostly however of a petty nature), it may be said that there was a good sprinkling of fraud.

Relief accounts were carefully checked, and nearly all the expenditure (Government and Mansion House Funds) has been vouchered and duly passed in audit.

Ch. III. Qn. 42.

Mysore.

Question 43.—Proper field for Private Charity in the various stages of a Famine.

Ch. III. Qn. 43.

What do you consider the proper field for private charity in the beginning, at the height, and in the decline of a famine? To what objects should it be applied, and through what channels? Should the funds be expended by Government servants who are also at the same time carrying out relief measures? Should they be expended in saving life and giving food? or should that be left entirely to Government, and the charitable funds confined to other objects, such as setting people up again in their pre-famine position, starting them again with a little capital, and thus assisting them with appurtenances which, though not luxuries, are not absolutely necessities of life?

Punjab, North-Western Provinces, and Bengal.—Private charity finds its sphere at the end of a famine, and also during the famine, in helping the more respectable poor who do not come on relief.

Bombay.—Private charity may be useful in towns in relieving the poor, and at the end of a famine in making grants of seed, grain, bullocks, and tools.

Madras.—Fifteen European and 3 Native gentlemen have replied.

When the crisis of famine is past, private charity may be employed with the greatest advantage in replacing the sufferers so far as possible in the position in which they were before the calamity fell on them. This may be done by grants for the purchase of seed grain, cattle, agricultural and trade implements and stock; and in carrying out this object the officers of Government should co-operate with private agency.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

Colonel Fisher.—I consider private charity should be restricted to two objects: 1st, at the height of famine the supply of food or money to those who, from circumstances beyond their control, are outside the scheme of Government famine relief; and 2nd, the setting people up again in plough-cattle, seed-grain, &c. at the close of the famine operations. The distribution of this charity should, in my opinion, be left entirely in the hands of respectable non-official native gentlemen, the Government servants only pointing out from time to time the localities where this charity could be most effective.

BENGAL.

Bengal.

Mr. Metcalfe.—Private charity should begin when Imperial responsibilities shall cease. Money subscribed during the progress of a famine should be nursed; and when famine operations cease may be best employed in assisting widows and orphans, in giving clothing, in helping to repair and build huts, in the purchase of cattle, seed, and household necessaries, and in helping artisans to recommence their trades. Charitable donations should be confined to such purposes, and not be wholly expended on the occasion of a general dearth in saving life, for that is an Imperial duty. The funds may be disbursed by circle officers at various stages of the famine as may be adjudged most beneficial to the sufferers from famine.

Mr. Marindin.—Though Government should retain the power of controlling the administration of private charity funds, I think the management of the actual expenditure upon authorised objects is best carried out by local committees composed of non-official native members. The funds may be most usefully expended in assisting people to start life again after a famine, but there are objects to which they may be beneficially directed during the famine itself, and which are primarily of more importance, such as providing for the necessities of families who are too respectable to come on to the Government relief lists. Local committees composed of native members are better able to search out such cases than European officials who, with the agency at their disposal, would be liable to overlook some cases and be deceived in others. Cotton spinning by respectable women can for this reason be managed best by local committees. The members of the committees, if they are properly selected, would be persons who could and would personally visit the abodes of persons needing or likely to need relief, and make themselves acquainted with their wants much in the same way as charitable ladies and gentlemen do in their visits to the poor in England.

Mr. Kirkwood.—I think, if it were necessary to draw a broad distinction between the field for the operation of private charity in a time of famine and the duties which must be left entirely to Government, I should say that it was the duty of Government to maintain during the time of famine, and that of private charity to restore to some small degree of comfort after the famine is over the lives which had been thus rescued by Government.

At all events, I consider that this is the field which most naturally and advantageously appertains to

private charity. There may be surplus funds which may be devoted to other purposes while the famine is still raging; but as regards any such operation, it is most essential that the fact that Government is to the nation and the world at large wholly and solely responsible for the support of the starving populatio should never be lost sight of, and any measures under taken in this direction by private charity must b under the complete control of Government and it officers.

BOMBAY.

BOMBAY.

Mr. Norman.—I have already partially replied to this question in answering No. 26, chapter I. I think that private charity should always be administered under the supervision of Government officers. The funds raised in a town or city ought, in my opinion, to be chiefly devoted to the support of the local poor, such as usually subsist by begging. For this purpose, soup kitchens may be established and cooked food given, and it might be advisable to establish a house for deserted children and orphans. The funds may also be fairly expended in providing clothes for the destitute. At the close of a famine small gifts might be made for the purchase of bullocks, and seed-grain might be given to cultivators to enable them to sow their fields. Further than this I would not go. I think gifts of money to enable people to start again with a little capital would be a mistake. The money would soon be dissipated and wasted.

Mr. Spry.—I think that private charity shoul have full play in every way at the beginning of famine, till it appears that the distress is greater tha it can meet, when Government should step in. Afte that I think private charity should stop, or at leas the expenditure of it should be merged in Govern ment relief, unless a distinct line can be drawn as t what Government will undertake and what privat charity will. For instance, if Government undertak to feed people, private charity might clothe them but if feeding from both sources goes on simultaneously demoralisation must ensue. As famine declines an people look to turning to their normal occupations, fine field is open to private charity in giving seed an money to cultivators, tools and materials to begin wit to artisans, and in redeeming necessaries pledged b people in the extremity of their distress.

MADRAS.

MADRAS.

Sir W. R. Robinson.—Local charity may be left to local judgment and administration at all periods of a famine. It is too casual a matter for Government to meddle with, too uncertain for reliance in matters of life and death. At no period of its course can a famine or the famine-stricken be left to casual private charity in this or any other country with safety.

This question refers apparently however to the Mansion House Relief Fund. I think the administration of this relief—a very considerable portion of which went towards saving life—was on the whole good, though I myself should—under the contemporary restriction of State relief—have devoted a larger portion to direct relief of famine and distress as the primary object of such charitable effort. The share taken by many Government officers—as members of local boards of relief, and experienced and well-informed advisers in the administration of the fund, —was suitable, unembarrassing and very beneficial in every respect.

Mr. Longley—The best field for private charity would be setting the people up again in their pre-famine position by assisting them with small capital to make a fresh start in life. This cannot be done either in the beginning or at the height of the famine, for money given at either of these stages goes in food. I would, therefore, recommend the intervention of private charity at the last stage, *i.e.*, the decline of famine, when, encouraged by the bright prospects before him, the ryot would naturally appropriate the money to better his position. The dispensation of charity should be entrusted to superior officers of the Revenue Department, whose intimate acquaintance with the condition of the people would be invaluable in deciding who are the fit objects for the charity.

Mr. McC. Webster.—I do not think there is any field specially appropriate for the intervention of private charity at the commencement or height of a famine. Private charity when exercised by individuals is generally indiscriminate, and does more harm than good in a period of distress, as it demoralises the people, keeps them away from the poor-houses o works, and renders it more difficult for Governmen to get them under control. I doubt whether, eve supposing there were a combination of the charitabl disposed and a subscription list opened, the receipt would be in any way sufficient for the up-keep of general system of poor-houses, and if it would not b sufficient, the establishment of one or two poor-house would be of little use. Even with the unprecedentedl large amount of the Mansion House Fund, the gener committee at Madras recognised the impossibility c meeting distress as the Government were meeting i and confined their operations to a limited sphere c money-doling, the distribution of cloths, and what, i my opinion, was by far the most useful form of privat charity, the distribution of money for the purchase c hire of ploughing-cattle and the purchase of see grain. This form of relief would be required late on when the next cultivating season came round, n at the commencement of distress when the agricultur classes would probably have ploughing-cattle and see grain. I think therefore that the appropriate field f private charity is at the end of the famine, and th it should take the form of helping people to recover.

Mr. Crole.—Its proper field is in aiding to reinstat persons in their pre-famine position. The distrib tories should be Government servants.

Mr. Austin.—Above all I would recommend t establishment of day nurseries for orphans, and oth children, mostly found in villages and towns, whos parents hardly earn what is sufficient for themselve This I consider the very best end to which privat charity can be devoted. It has been tried both i towns and in some of the principal villages out Mansion House funds, and is found to answ admirably well, and the result was the saving of large number of valuable lives. Moreover, if childre are neglected at this stage and their system on allowed to wear down, they can never fully recov the effects of the privation, and will naturally gro up but a weak generation, even if they managed survive.

MYSORE.

Major Moncrieff.—Charitable funds should be confined to setting people up again in life, for instance, with bullocks, ploughs, looms, &c.; to giving little comforts in the hospitals, by establishing day nurseries for children and such like. Saving life and giving subsistence is the part of Government. From my experience the best disbursers of charitable funds are Government relief officers, but I am told that in Madras the missionaries rendered the most efficient help.

Mr. Ricketts.—Ordinary private charity in time of famine contracts, and I think it should be left to the donors it natives, to spend it as they liked and which would be mainly in food and clothing to the poor. Government servants may step in with advice so as to direct the various minor sources of private charity into one main end or object. In this respect, however, there should not be too much interference and no injudicious attempts made to check that charitable national tendency so remarkable in the natives of India. Private charity should undoubtedly be first expended in saving life and giving food and raiment, as it is impossible for Government, working on certain rules and principles, to deal effectually with every case of hunger, nakedness, or sickness.

I apprehend this question is put mainly with reference to the princely donations of the British nation known as Mansion House Funds. Even here it seems the province of Government to restore people to their pre-famine position, and to expend the Mansion House Funds in relieving actual distress. Starting people with a little capital and so on must be a consideration secondary to that of saving life, and one objection to the pre-famine view of the question is that probably some are helped who are really as well off as regards the necessaries of life as the donors. In fact I think Mansion House Fund distribution has gone a little too far and propped up some ryots who in the altered change of circumstances should for a time at least have descended to the scale of labourers. There is a strong suspicion, too, that certain part of these funds were diverted from legitimate purposes in order to help to meet the Government revenue demand, regarding which there was more than usual pressure by the novel system of postponements. Still it might be argued by some that even this diversion tended, as enabling the ryot to pay off his debt to Government, to give him a fresh start in life. On the whole, as the Mansion House Fund was so magnificent in amount, and as Government was spending munificently at the same time, it must be admitted that the restoring of persons by means of the former to their original simple status, and which in each individual case required but a small amount of money, was an extremely fertilizing way of using the money and probably checked much privation in the future, which the mere bestowing of alms, as such, would not have done. A too profuse distribution of mere food and clothing would have produced demoralization and tended to aggravate in the long run the state of things it was intended to mend. Whereas in helping ryots and others to replace their cattle, rebuild houses, buy seed grain and start their looms and other industries again, the country has been made flourishing, and permanent prosperity and consequent less poverty secured.

QUESTION 44.—AFTER EFFECTS OF FAMINE ON THE COUNTRY.

What has the effect of famine been, in your experience, on the subsequent condition of a district? Where villages were deserted, have they been permanently depopulated, or has the population returned to them? Has much land been thrown out of cultivation, and for how long has this decrease in the cultivated area continued? Has it been due to want of cultivators, of plough-bullocks, or of capital and of seed-grain?

Punjab and North-Western Provinces.—If the population is sparse it recovers slowly, as was the case in Jhansi after 1868. In most of the North-Western Provinces, one or even two years of famine would not permanently reduce the land in cultivation.

Bengal.—Opinions are expressed that both the Orissa and Behar famines have been actually beneficial, that the recovery of advances from the ryots has impressed thrift, and that trade has been stimulated. Cultivation had recovered itself in Cuttach by 1870, and in Behar was never much affected.

Bombay.—The effect on the landed class has not been very injurious.

NORTH-WESTERN PROVINCES.

Mr. Story.—The after-effects of a famine in a district depend if the population of the district is large or not; if the population is large the district soon recovers itself; if small, as for instance Lalitpur and Jhánsi, the effects of the famine last for years, a lot of land is thrown out of cultivation, and villages become almost deserted. There are villages of this kind in the Jhánsi district that have not yet recovered from the famine of 1868–69.

Mr. Lumsden.—In my experience (confined to Gorakhpur and Rae Bareli) the effects of famine on the condition of a district have been temporary as regards depopulation and the decrease of land under cultivation. In Gorakhpur certainly no villages were permanently depopulated after the famine of 1873–1874, and any land thrown out of cultivation was again brought under the plough the very next season. In Rae Bareli the famine is only *now* ceasing to be, but there is nothing to lead me to believe that here either any villages will be depopulated or land allowed to lie waste for any length of time; indeed, the experience of the present kharíf season shows that with seasonable weather all the land which has been thrown out of cultivation will at once be brought under the plough. Even during the present kharíf season, with the exception of bijar dhan land (for the cultivation of which sufficient rain did not fall at the proper season, and rice seed was very scarce), it has been ascertained beyond doubt that there is more than the usual area under cultivation.

I am not, of course, prepared to say that the evil effects of famine in depopulating the country and throwing land out of cultivation would not be of a more permanent character when the famine was of longer duration and its severity more intense than has been the case in the instances of which I have personal knowledge. On the contrary, I believe that the effects of famine would under such circumstances be more permanently felt; but even then, I think, pre-

vided the population of the tract affected were not decimated it would not be many seasons before the average extent of land was again brought under cultivation. With the demand and competition which now exists for land, the few other openings there are for the bulk of the population, and the rude and primitive nature of the implements necessary to enable a cultivator to start a small farm, and the facility with which the necessary funds can be raised (although at a ruinously high rate of interest) for such a purpose, I am certain, in these provinces at least, it would take more than one or even two years of famine to have any lasting effect in reducing the extent of land under cultivation.

The cry of the natives in Oudh seems to be that since our rule was established in the province there are not the same openings which there used to be in Nawabi times for employment in Government service, and that all are now forced to look to agriculture for the means of subsistence—a fact which has increased the competition for land, led to an enhancement of rent-rates, a diminution of the average size of agricultural holdings, and has generally reduced the means and social position of those engaged in agriculture as the means of earning a living.

I am distinctly of opinion, as far as my experience goes, that even the temporary diminution in the extent of cultivation consequent on famine has been attributable to difficulties in procuring plough-cattle or seed-grain, not to the want of cultivators.

BENGAL.

BENGAL.

Mr. Barlow, Bhagulpore.—None of the permanent evil effects described in these questions have been remarked as having followed the season of 1873–74 in this province.

Colonel Burn, Durbhunga.—Very disastrous; it takes years for the ryots to recover the effects morally and financially. No Raj village was depopulated during the famine or since. A good deal of land was thrown out of cultivation in some villages, and it is not yet all taken up again; but where river irrigation was available, and Koiree or Gwala cultivators preponderated, there are now no waste lands owing to the famine. We supplied seed-grain in large quantities, and lent money to our ryots; bullocks are not deficient. The fact is, it was scarcely a cattle famine; the bullocks were, so to speak, in clover, as they ate up the half-grown but withered crops, and the rains brought them pasture.

Mr. Worsley, Mozufferpore.—The effect of the famine on this district has been, on the whole, good.

The determination which has been shown to collect the famine advances, though tempered by great moderation as regards the instalments, will prevent the ryots in times of future scarcity or famine from taking advances rashly or unnecessarily. The ryots have become more careful of their grain, and will part with any property they can dispose of rather than sell all their grain after a short harvest. The district has been supplied with a large number of good tanks and good roads, and to the famine may perhaps be due the construction of the Mozufferpore Railway. The effect, again, has been excellent in a political point of view. No villages were deserted in the famine. More land has come under cultivation.

Mr. Hodgkinson, Sarun.—The cultivated area of the district was not affected by the famine of 1874. Land in a district so closely inhabited is necessarily in great demand, and a decrease of 25 per cent. of the population would not, in my opinion, make any material difference in the area under cultivation. If a holding is given up, it rarely remains unsettled for even a single harvest. But the effect of the 1874 famine on the people has not been transient. The harvests since then have not in a single year been up to the average, and the recovery of the large advances made during 1874, under such circumstances, has pressed hardly on the cultivating class generally. But I have no reason to believe that the general impoverishment will be permanent, for the fertility of the soil is such that even one really good year of harvest would revive the depression, and put an entirely new face upon the district.

Mr. Toynbee.—My only personal experience of the after-effects of famine was in Orissa. By the end of 1868, and beginning of 1869, all outward traces of famine (except the village Golgothas) had passed away. Many people returned to their homes; the land was fully tilled, the revenue fully realised. The capital brought into the province, and the improvement of its communications by means of canals, left it far more prosperous after the famine than it was before it.

Mr. Finucane.—In the Dinagepore, Monghyr, and the greater part of the Durbhunga district with which I have been connected, the famine of 1874 did not lead to the depopulation of villages. In the north of Madhubain and Soopool subdivisions, where, within the past 15 years, there have been three years of serious failure of crops, there has been considerable desertion of homesteads. In pergunnah Alapur, which is the worst tract in this respect, 26 per cent. of the cultivated area was thrown out of cultivation in 1874, 1875, and 1876. This was principally owing to the scarcities of 1873–74 and 1875–76, but in some degree to other causes also; some of the area thrown out of cultivation was again brought under cultivation in 1876–77. Much more has been brought under cultivation during the present year, and all will probably be under cultivation next year.

Mr. Kirkwood.—In Bhagalpore district (1874) the relief given was so ample that I doubt any additional mortality having taken place during the year. Those few who died from the effects of starvation were, I think, fully made up for in numbers by the lives preserved in the case of aged, feeble, and diseased persons who in an ordinary year would probably have perished. No villages were deserted, no land was thrown out of cultivation. The famine over, things at once resumed their normal state. I believe there was widely diffused among all classes in North Bhagalpore, from the wealthy landlord who had spent considerable sums to the poorest hand-to-mouth liver, a genuine sentiment of admiration and thankfulness, both for the result secured and the manner in which it had been brought about.

In Cuttack (1866–67) things were different. An enormous mortality was accompanied by numbers of deserted homesteads and fields. In some instances whole villages of the poorer and smaller stamp were thus deserted. Where whole villages have been deserted, I am unable to say that within my recollection they have again been repeopled. The deserted lands have generally, I think, in such cases (which, so far as my memory serves me, were not many), been gradually taken up by cultivators of the neighbouring villages. Partial desertion of villages to the extent of one half, or even more, of the houses was by no means uncommon. In such cases those who remained generally took into cultivation a portion of the deserted lands, while other portions were gradually taken up by the more wealthy cultivators of neighbouring villages which had fared better. In many cases homesteads which had been at first deserted were in subsequent years gradually re-occupied by some surviving members of the family who had fled to Calcutta

or elsewhere; and the instances, if I remember right, were not few in which such persons laid claim in the courts to their ancestral lands, which since the famine time had been rented to others.

In the year 1866 there was in Cuttack much land out of cultivation, but not more, I think, than was proportionate to the loss of population. In 1867, though much land still remained untilled, the cultivation was, proportionately to the population, greater than in the pre-famine years. Year by year the area of cultivation increased, until, by 1870, it had fully resumed its normal extent, and had even passed it, for the canals and improved embankments had by that time admitted of considerable areas, which had always lain waste, being reclaimed. This latter process was continued in subsequent years.

The diminished population was the main, if not the sole, cause of the defect of cultivation in 1866 and 1867. The supply of seed-grain was wonderfully preserved even in those years of keen suffering. In 1867 the seed-grain used was entirely procured by the people themselves, except about Rs. 3,000 worth, which was distributed by the relief agency. This feature is, I think, one of the most surprising in connection with Indian famines. The seed-grain hoards are generally largely in the hands of the local zemindars and mahajans, whose solvency depends on their tenantry and debtors being able to cultivate the land, and I imagine this fact in a great measure accounts for the phenomenon.

In Bhagalpore (1874) a failure of seed-grain was apprehended, and some 15,000 maunds were imported by Government. Of this quantity we sold about 2,000 maunds, and advanced to zemindars and cultivators about 10,000 maunds. The people themselves had retained large supplies.

In Bhagalpore there was no loss of cattle; the vast churs of the Kusi river, which separates North Bhagalpore from Purneah, are annually turned into a great pasture ground for the cattle of both districts. In Cuttack there was some loss of cattle, but no special measures were adopted. The surviving cattle sufficed for the wants of the surviving population.

For some years after the 1866–67 famine was over about a thousand women, who had been in our light-labour gangs on the canal works in Cuttack district, stayed on as labourers upon those works, forming settlements of their own. Gradually these hard-working creatures made domestic arrangements and settled down for life with some man, but when I left Orissa in 1872 these female gangs were not yet altogether broken up. They were much approved of by the canal officers, who found the women constant in their attendance and very hard-working.

CENTRAL PROVINCES.

Mr. Nicholls.—Effect of Famine.—I served in Bilaspur in the years 1873–74. At that time there was not a trace observable of the preceding famine; it was seldom spoken of, unless questions were asked about it. I have very recently been in the Murwara Tahsil, and the country appears to be much better off than it was before the famine.

Deserted Villages.—Apparently the population has generally returned to them. No villages appear to have been depopulated, except in Raipur, where the habits of the people are particularly migratory. "People left the distressed tracts in large numbers "owing to the inability of the landlords to support "them, and 14 villages became deserted, and were "recommended to be absorbed into the Government "wastes. Other villages with 40 or 50 ryots are "reduced to two or three. In most cases the mal-"guzars are poor, and will take years, perhaps will "never, be able to recover, in consequence of the "reduction in the number of cultivators, and reduction "in the area cultivated. The poverty of the landlords "will be an effectual bar for some years to come to "their being able to replenish their agricultural stock "or bring their villages up to their former state of "prosperity."

The 14 villages mentioned above were brought into the district unreserved forest area.

Land thrown out of Cultivation.—Notwithstanding the great exertions made at the sowings of 1869–70 to recoup by extending the area of cultivation, it seems that the cultivated area receded by 73,563 acres from what it had stood at in the year before. In 1869 the area was 1,849,874 acres. In 1876–77 it was in excess of 2,350,000 acres.

In Shargarh (of Saugor) the cultivation recedes from 15,188 to 9,983 acres.

Out of the 1,436 villages in the Bilaspur and Seori narain tahsils in the year 1869–70 only 466 villages were fully sown, and 534 were two-thirds, 405 half sown, and 31 were more or less waste.

Making every allowance for the effects of the cholera epidemic and the great losses among the cattle, beyond doubt a great portion of this decrease in the cultivation was due to the want of seed grain.

In the Murwara Tahsil the course of cultivation is thus shown:—

1866–67	248,937
1867–68	240,165
1868–69	203,969
1869–70	171,681
1870–71	180,317
1871–72	185,543
1872–73	178,285
1873–74	199,867
1874–75	211,588
1875–76	222,768
1876–77	248,630

Cause.—The Deputy Commissioner of Saugor was of opinion that in Shahgarh it was owing to the neglect of the tahsildar to urge the giving of taccavi advances for the purchase of seed grain.

In Murwarra I attribute it to the loss of cultivators through the cholera and small-pox epidemics, perhaps also directly to deaths from famine, and in the second place to the great mortality among the cattle. The matter of seed grain was adequately met by Government help. I am inclined to think that it might have been better not to have looked strictly for security on such advances, for it appears to me that a loan of seed grain, especially if made by Government, would, as a matter of fact, be regarded as a sacred trust, and that bad debts would hardly be made. According to the custom of the country a debt for seed grain is allowed precedence over all others. In such cases the management of the total advance for each village had better be entrusted to the malguzar. In Bilaspur much is believed to have been due to the want of seed grain, as well as to the losses of cultivators by death and migration, and the excessive loss of cattle.

In Raipur the same causes reduced considerably the number of cultivators and of agricultural labourers, while cattle disease or the effect of want of food and exposure swept off a third of the cattle of the district. The Deputy Commissioner noticed that "the seed "grain difficulty, in so far as it could be met by the "action of Government, had been dealt with, and up "to the 30th June, 1869, advances aggregating "Rs. 10,135 had been made. The applications would "have been much more numerous, but for the local "custom called 'barhi.' No one who could get seed "grain by this customary process would dream of "borrowing money from Government to purchase it, "because the great difference (perhaps 400 per cent.) "in price between grain now and at harvest time "would necessarily entai a loss much greater in "degree than that resulting from the payment being "made in kind."

Ch. III. Qn 44.

BOMBAY.

Bombay.

Mr. Propert.—The scarcity of the two years past has, as regards Khandesh, left the people in a very impoverished condition. Cattle have died in large numbers, ornaments have been disposed of freely, but I cannot say that villages have been permanently deserted or that any decrease in the cultivated area has been caused. In fact, at the commencement of the season of 1877 new land was taken up in many places, and this I think proved how very hopeful the people were as regards the future. In many cases, however, the land was not even sown, as the rains during the season of 1877 were up to the end of August most unsatisfactory and insufficient. If the coming harvest be plentiful, I do not consider that the people of the district will as regards means of living, be worse off than before the late scarcity.

Mr. Moore.—The effect of the late famine, the only one of which I have any experience, has been less disastrous than it might have been, owing to the timely measures adopted by Government. The respectable poor, higher in the social scale than labourers and cultivators, severely felt the high prices, but they have outridden the storm. The better class of cultivators have lost a great many head of cattle, but the labourers and ordinary cultivators, who live from hand to mouth, have been supported on our large works, and are no worse off than before. No villages have been entirely deserted nor permanently depopulated. Much land has not been thrown out of cultivation, and what has been so thrown out does not exceed the area remaining uncultivated in an ordinary year. Famine does not appear to have caused any appreciable decrease in cultivation. What there is is principally due to temporary emigration.

Mr. Hamilton.—I believe that at least one quarter of the population has disappeared from the villages of this district since the monsoon of 1876. But it must be noted that last season was quite as bad as the one before it, although relief operations were not in progress to any large extent, nor was it recognised as a famine by Government, as only a small area of the whole presidency was affected.

Much arable land is uncultivated, but this is probably due to the high price of seed as well as to the scarcity of cattle. In the large taluka of Kopargaon (area 505 square miles, population 64,000, number of villages 125) only 64 holders of land will be ousted by the Revenue Department on account of long absence and defaulting revenue, so that it is pretty clear that the bulk of the missing population are not cultivators, but are persons, such as mhars and jaglyas, whose livelihood depends on the prosperity of the cultivators themselves; and these are the very people, as before observed, who first feel the effects of a bad season.

My own observations distinctly point to the conclusion that the agricultural population which has no beneficial interest in the land has suffered more than the landholders themselves.

Mysore.

MYSORE.

Mr. Ricketts.—I have had no experience of previous famines, but I have seen enough of the Indian ryot to know that he possesses wonderfully recuperative powers.

Ch. III. Qn. 45.

Question 45.—After effects of the recent Famine.

In the case of the recent famine, what effects such as those just referred to have been produced? How many villages have been deserted, how many have been seriously affected; what is the reduction in the area under cultivation now compared with what it was two years ago? How many holdings have been abandoned? Have the landlords, or ryots with whom the settlements are made, been permanently impoverished in a serious degree? Is there any reason to anticipate increased difficulty in realising rents or land revenue for the next few years by reason of the recent pressure, if the seasons are favourable? What proportions of landlords or ryots are likely to be dispossessed of their holdings through the action of the Revenue or Civil Courts, as a consequence of distress produced by the famine? Has the agricultural population which has no beneficial interest in the land suffered more in proportion than other classes?

Punjab and North-Western Provinces.—Villages have not been deserted. The tenants have suffered more than the landlords, and the landless class more than either.

Bombay.—Some small villages were deserted, but the people have returned to them, and a large area has gone out of cultivation.

Madras.—Thirteen European and three Native gentlemen have replied.

Statistics are given, but the question was in the opinion of some officers premature, as it was still not known how far emigrants would return.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Mr. Sandys.—The failure of a single harvest has affected the agricultural population of this district as defined in Question 8, Chapter I., only so far as to add generally to their already heavy debts to the money-lenders, usurious interest having been charged for all advances made during the time the distress continued.

Villages have not been deserted or permanently depopulated, and two thirds of the persons who left them are said to have returned. A much larger area than usual was under the rabi crop, and the area under the present khárif is more extensive than in an ordinary year.

The loss of almost the entire out-turn of one harvest, followed as it was by an out-turn above the average of the next harvest, has not permanently impoverished in a serious degree the landlords or tenants in this district, and if the seasons are favourable there is no reason to anticipate increased difficulties in realising rents or land revenue for the next few years by reason of the recent pressure.

The number of estates sold by order of the civil

courts and number of tenants ejected by order of the revenue courts were for the current agricultural year, as compared with the number in the previous year, as follows :—

	No. of estates sold.	No. of tenants ejected
From 1st October 1877 to 30th August 1878 -	403	348
From 1st October 1876 to 30th August 1877 -	387	759

Of the agricultural population the chamárs, khoris, and ahírs have been the greatest sufferers. They have generally no beneficial interest in the lands, being merely field labourers at the harvest times, and at other times gaining a subsistence as best they can by working in leather, cleaning hides, making coarse cloth, and tending cattle.

Mr. Kennedy.—No villages have been deserted. There has been a falling of about one fourth in the area under kharíf compared with that two years ago. The land thrown out of cultivation is chiefly poor rice land. There was some difficulty about plough-bullocks. Advances by the baniyas were limited, and there was a great want of rice seed-grain. Judging by the returns of a large estate in the worst part of the district, one eleventh had died or fled and four-elevenths had been considerably impoverished.

About one twelfth of land revenue will probably remain unpaid at the end of the year, but the greater part of this will be recovered within a short time. The proportion of rent which has been realised by the landlords is much smaller ; more than one third at least remains unpaid, and a considerable part of this will have to be abandoned. The famine has considerably accelerated the sale of land by the civil courts.

Mr. Lumsden.—I have in my answer to the previous question indicated generally my opinion on the points alluded to in the first three queries put in this question ; but it is too early to attempt to give actual results in figures, as it is only since the middle of August that the famine can be said to have come to an end, and there are still relief works open.

I have no doubt many ryots have been permanently impoverished to a serious extent through the recent drought, but I question if any landlords have been permanently impoverished in a serious degree. In the tahsíl where the pressure was greatest and the failure of the kharíf most complete 4 annnas of the Government demand has been suspended, which will give substantial relief elsewhere ; also, though formal suspensions have not been sanctioned, great discretion has been used in enforcing payment, and the balance outstanding at the end of the year will therefore be heavy.

With our present excellent prospects, however, it is hoped the greater portion of this balance will be got in during 1286 Fasli. In some few cases, however, it may still be necessary to sanction suspensions, postponing the demand for a longer period.

With favourable seasons during the next few years, I certainly do not consider there should be any increased difficulty in realising rents or land revenue in this division.

Certainly the agricultural population which has no beneficial interest in land has suffered more in proportion than other classes.

BOMBAY.

Mr. Spry.—No villages have become actually or permanently deserted ; but in many villages the majority of the inhabitants left during the famine. These people, or at least the survivors, have gradually returned, and are even now doing so, the present cultivating season being a very favourable one. Till this cultivating season haf expired it is impossible to give any exact data as to the decrease, if any, of the area under cultivation compared with that of two years ago, because ryots returning resume their occupation at the last moment. The landlords have certainly not been permanently impoverished, although many have been much pinched from not getting their rents. As regards the ryots, the better classes of them who held grain stocks have profited rather than lost by the famine, in that their stocks commanded such exorbitant prices. The middle and lower classes suffered much, but they are a thrifty race, and in course of time, provided favourable seasons follow, will regain their normal condition. The greatest blow to agriculture has been the loss of plough-bullocks, which was very great. I do not anticipate much difficulty, if any, in realising the land revenue, provided the crops are at least average ones. I do not think that many landlords or ryots will be dispossessed of their holdings through the action of the revenue courts, as I have avoided and do avoid such extreme measures. Of the civil court I cannot say, although undoubtedly much land has been mortgaged and sold to wealthy people. The lower classes of the agricultural population have undoubtedly suffered terribly, but I think they are about on a par with similar classes amongst the urban population.

Mr. Percival.—Many small villages were entirely deserted in 1877, but they are all now very much as they were before. People are still returning, and the reduction in the area of cultivation cannot yet be judged. A considerable amount of inferior land will go out of cultivation for a time, but the return from such lands is so uncertain that it is doubtful if this is to be regretted.

MADRAS.

Mr. Longley.—In 1,136 villages more than 40 per cent. of the population were missing ; what proportion of the missing must be credited to desertion from the village and what to death it is impossible to say without further information, for which I am now seeking.

The area under cultivation in the official year 1875-76 was 1,101,158 acres, and in the year 1877-78 865,881 acres. This reduction is 22 per cent. The above figures do not include the cultivation in zemindari, &c.

Rent Roll.	Number of holdings abandoned.
Puttas paying below 10 rupees - - -	17,847
Puttas paying between 10 and 30 rupees -	5,033
Do. 30 and 50 „ -	236
Do. 50 and 100 „ -	27
Do. 100 and 250 „ -	7
Puttas paying above 250 - - - - -	—
Total -	23,150

NOTE.—These numbers are significant as showing the class who felt the pressure of the famine the most.

Yes. Landholders whose holdings have been abandoned may be considered to have been permanently impoverished in a serious degree. Such consist chiefly of small puttadars paying a revenue of under Rupees 50.

There is not much likelihood of these ryots reverting to their previous condition for the next few years, however favorable the seasons may be, as they will not have sufficient funds to resume their usual occupation. For this reason I apprehend serious difficulty in the recovery of the revenue from such small landholders.

Yes; on account of suspension of labor in the fields.

Mr. Crole, Nellore.—The famine has thrown this district back five or six years. Many villages have been partially depopulated. The loss in population ranges from 28 to 34 *per cent.* on the Census of 1871. Few villages have been entirely depopulated. All have suffered. The decrease in cultivation up to date as compared with two years ago is about one-third.

There will for some time be increased difficulty in realising the revenue. The agricultural population possessing no beneficial interest in the land have suffered much more in proportion than other classes.

Mr. McC. Webster.—The dry cultivation up to August of this year compared with the cultivation up to the same period in 1875 (1876 was a bad year) is 610,905 acres in the present year, against 587,187 acres in 1875. It is not possible within the time allowed to collect information as to the number of holdings abandoned, but the number of acres abandoned since 1875 is acres 8,531. This refers to lands given up by ordinary "Rajeenamah," and does not include lands which have been deserted. We have no record of the latter.

If the seasons are favorable there is no reason to anticipate increased difficulty in realising rents or land revenue for the next few years by reason of the recent pressure, though there may be difficulty in realising the arrears of this and last year. It is not possible to estimate the numbers of ryots likely to be dispossessed, though the records of the registration offices show that there has been a great increase in sale and mortgage deeds and money bonds. Distress has been equally heavy on all the poorer classes, agricultural laborers and weavers having suffered most.

Mr. Price.—I think, with all deference, that this question is rather premature. No villages have been actually deserted. I quote from a report received today (16th September) from the relief officer in charge, Ponnéri taluk, which will show how difficult it still is to make any reliable estimate in regard to the number of the population who have permanently deserted their villages in consequence of the famine. Mr. Innes, who is a good and active officer, and who has been some time in the Ponnéri taluk, writes—"An immense number of the able-bodied cooly class who left their homes in search of employment have returned to their villages." Between March and the period of which Mr. Innes writes, a very large number of people must have returned. I myself, when in the taluk, ascertained this. The 10 per cent. difference found in March between the Census of 1871 and that of this year cannot therefore now really exist, and whatever difference might be found on a second census would have to be divided between deaths and absentees, to the former of which causes by far the larger number of cases would have to be assigned. Generally speaking, I should say that very few, if any, villages in this district have been seriously affected by the desertion of the population. I have recently had every reason to believe that the accounts of cultivation sent in in this district are utterly unreliable, and that the practice is not to write them up at all until August or September. In more than one taluk of this district I found that the cultivation up to June was entered as "nil," whereas, as I have personally ascertained, such was not the case. I enclose the last comparative statement of cultivation. This, I am perfectly convinced, is not yet correct. I know, from what I have seen when moving about, that the cultivation must be more than is stated. I believe that the return for October will show the cultivation nearly, if not quite, up to the mark. Two causes tending specially to decrease cultivation in this district, if any such decrease has occurred, have been—

(1) That, pending the introduction of the new settlement, the disposal of durkhasts was under orders of the board, suspended for something like two years.

(2) That the introduction of the new settlement has, as it always does for a brief period, given rise to more frequent relinquishments than are usual.

The number of holdings abandoned cannot be stated as the annual settlement is not yet over. I do not think that landlords and the better class of ryots, especially the former, have been permanently impoverished in a serious degree by the famine. They have in most instances, no doubt, suffered severely and it will be some time ere they will be in the same position as the famine found them. Many will, I believe, never recover their former status, but these will not be the laborer, the landlord, or the ryots, who live wholly on the produce of their lands, but the very small farmer. These have parted long ago with their lands and what they had, and have descended into the laborer class from which, with rare exceptions, they will not, in the present generation at any rate, emerge. As for the better class, two or three good seasons will set them right, and the laborer will, as soon as prices fall, be as well off as he ever was. The landlords, *i.e.*, the puttah-holders, who are absentee proprietors, have suffered from high prices, and may have lost a part of their rents during the years of scarcity, but they will as a class take very good care to make this up when the favorable seasons come. I do not think that, as far as this district is concerned, there need be any difficulty, under the condition named, in collecting the rents and land-revenue as usual, at any rate after the crops of this year are in. It is impossible to say what proportion of landlords and ryots will be dispossessed of their holdings, through the action of the Revenue or civil courts, as a consequence of the famine. I could not say, even make a guess on this subject. The sales of land on account of arrears of revenue are thus far but small, and collections are making very fair progress.

As for sales by civil courts they cannot be many, as suits have fallen off a good deal, and, as far as I know, the applications for transfers under court decrees are but few. My experience of the famine has been that where money was lent to the ryots, it was but very seldom indeed upon the security of land, and that where that was the security, it was generally of so valuable a class that the owner would take good care not to part with it. I do not quite understand the bearing of the concluding portion of the question. If by "the agricultural population which has no beneficial interest in the land" is meant the agricultural laborer *pur et simple*, I should say that he is no worse off than others; but if the construction to be put upon the sentence is the occupier but not the owner of the land, then I should say that he has suffered more in proportion than the other classes. The ordinary ryot has had a very large proportion of the demand against him remitted, whilst the cultivating occupier has had to pay up to his landlord whenever possible to force him to do so; he has had no relief, but what he could get out of Government as a pauper either on works, in a poor-house, or on village relief.

Mr. J. G. Horsfall.—I do not think that any

villages have been permanently deserted on account of the recent famine in this district. The general deputy collector states that in his division one hundred villages were deserted, but it is too soon to say whether this was only temporarily or not. In September last I met hundreds returning to their villages on my march from Guntur to Bezwada.

Our returns will show that there is a slight reduction in the extent cultivated this year compared with that it was two years ago.

Mr. Oldham.—No villages have been depopulated or deserted during this last famine. The amount of land thrown out of cultivation this year in some villages amounts to 50 per cent. This has been due to want of cultivators, of plough-bullocks, and of capital combined, not to want of seed-grain unless when its want was due to want of capital.

From January to May 1868 I was almost without interruption in camp in different parts of the Kendrapara division of Cuttack. My recollection is that, with the exception of some deserted hamlets, or rather groups of houses, there was not then a trace of the famine visible.

Mr. Weekes.—Some villages in one of my taluks of Cuddapah suffered great losses from fever. I was told that one large village was nearly deserted and had a census taken of it which I sent to the collector. I have not it by me to refer to. Fever following famine was very disastrous. Several villages in Kurnool have suffered very much from famine, and some hamlets have only two or three houses occupied. I have seen one or two deserted hamlets, but am not sure whether they were deserted in the last famine or before. I do not know the amount of the reduction in area of the cultivation except that in the Pattikonda taluk of Kurnool. The area under cultivation up to March 1878 was 183,183 acres compared with 257,822 the average of the previous three years, or little more than two-thirds. The Cuddapah ryots, or rather the bulk of them, have not, I should say, been permanently impoverished in a serious degree except by the loss of bullocks. Many of the smaller ryots must have parted with their lands. They are exceptionally good farmers and substantial men, and made large profits during the Lancaster cotton famine. I have not seen such good farmers in India, except the European indigo planters. The poorest ryots have suffered no doubt permanently in a serious degree, but the great cholum harvest of 1877-78 which was magnificent in Jamalamadugu has enabled nearly all to redeem the lands which they had mortgaged. I heard that a well-to-do missionary had all his mortgages paid off by the mortgagers. Nearly two years' harvest in one and high prices have been the saving of all the Jamalamadugu ryots that could cling to their lands. Those who lost bullocks and had to sell their land must have bitterly regretted doing so. The Kurnool ryots seem a poorer lot. Different districts and parts of districts have not suffered in the same way. I should not anticipate any difficulty in realising revenue in my division in Cuddapah, though the loss of cattle must make the land less productive. There will be no difficulty in finding cultivators, as I have often heard non-cultivators complain they could not get lands, and that the ryots were the only people who were well off. In fact they would like an agrarian law. The famine will have caused many small holdings to pass into the possession of village Reddies, Curnams, and other well-to-do persons.

MYSORE.

Mr. Ricketts.—Some 63 villages and hamlets have been deserted and some 1,800 villages have been seriously affected in the recent famine. Though a village may be deserted yet some of its land is still under cultivation, the survivors having gone to reside in neighbouring villages for the sake of company or safety.

The reduction in the area under cultivation now compared with what it was two years ago is some 13,440 acres.

The number of holdings abandoned is some 4,320.

Landlords and ryots have in one sense been permanently impoverished to a serious degree, as they have had to part with much jewels, cash, and cattle, in order to purchase food. But wealth in jewels and buried rupees is in a great degree unproductive, so that the impoverishment above referred to will (save as regards future famine contingencies) not be apparent and even will not be felt physically (through moral wants may not so kindle and aspire owing to loss of material wealth) in the matter of grain crops and general farming. I have recently visited a taluk, Anikul, much affected by the recent famine. Its whole length and breadth presented almost the same amount of cultivation as in ordinary years, and that too not indifferent culture, but carefully ploughed and weeded fields, and as a consequence a most luxurious growth of crop.

The agricultural population which had no beneficial interest in the land have suffered more than those possessing a beneficial interest owing to general inferiority in industry, intelligence, and the like, but as compared with "other classes" they have probably suffered in a less degree.

CHAPTER IV.

Ch. IV. Qn. 1

Question 1.—Practical use of such Schemes.

After 1868 the Government of India gave instructions that schemes of works should be prepared, suitable for execution in the event of famine. Were such schemes ever prepared? If so, have they been found of practical use during the recent pressure?

SUMMARY.

No general scheme of famine works seems to have been prepared except in Bombay.

Punjab.

PUNJAB.

Lieut.-Gen. Maclagan, R.E., says that there is no scheme or record of works specially proposed for famine relief with reference to the experience of 1868, apart from the general list of estimated and sanctioned works waiting for an opportunity of being carried into execution. The instructions of the Government of India referred to have not been traced in the records of the Public Works Department. In the famine of 1868, and in the scarcity which prevailed in certain parts of the Punjab in 1878, small local works such, for the most part, as would have been carried out in ordinary course, were opened in the districts affected, and sufficiently met the demand for employment of this nature.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Mr. W. C. Plowden, Meerut, says that no schemes were prepared until 1877, as the years 1869–76 were favourable.

Mr. R. D. Spedding, Gorakhpur.—Schemes of proposed works were prepared in this district, and included mainly road improvements, terminating with a railway work in the event of extensive labour being found necessary.

Mr. R. M. Edwards, Rohilkand, was not in the division from 1868 to 1875, but he never heard of these schemes, and he does not think that any were prepared.

Bengal.

BENGAL.

Colonel Cadell.—The instructions given by the Government of India after 1868 for the preparation of schemes suitable for execution in the event of famine, were carried out. Rough schemes were prepared, and they were found practically useful.

Colonel Haig.—With regard to questions 1 to 11, I would premise that they appear to me to be all based on an assumed state of things which need never exist, and which, with a wise, cautious, and very moderate outlay upon irrigation, navigable canals, and railways, could not possibly exist. The assumption seems to be that the normal condition of the country is to be one of constant risk of famine; that Government is to be perpetually on the watch for the invader whose inroads may be expected at any moment; that special provision is to be made to meet the invasion, a strong force kept in hand for the purpose, all in readiness to be set in operation at the shortest notice; in fact, that there is to be a Famine Department as a regular branch of the administration of the country, just as I believe there is actually a famine chapter in the new Public Works Code.

An assumption more utterly baseless, as far as Bengal is concerned, cannot be conceived. The province can be placed beyond all possible reach of famine at a very moderate outlay upon a few well-considered schemes, which might be carried out in a regular way, under the ordinary rules, at one-third what they would cost if executed in the confusion and hurry-scurry of famine, and which would, after payment of working expenses and a portion of the interest, leave a comparatively small annual charge to be met partly by a charge upon the Imperial treasury, and partly from the proceeds of special taxation, as in the case of the present Public Works Cess. There is not the slightest occasion for plunging into schemes costing scores of millions of pounds. The only result of all the wild talk of this kind is panic, and a settled determination to do nothing lest the Government should be committed to undertakings involving national bankruptcy. All that is necessary would be to ask each local Government what works it considers necessary to ensure a sufficient supply of food in the country under its rule in all years, together with proper means of distribution. The replies would be simple; the schemes would be those worked out by men who really know the country and its resources, and the outlay required would, I am persuaded, after revision of the proposals of the local Governments by the Government of India, be found to be quite moderate and practicable. This much premised, I proceed to answer the questions seriatim.

No schemes of works specially suited for construction in time of famine have been prepared since the orders of the Government of India upon the subject in 1868. One or two large schemes, such as the Rajmahal Canal, the Raneegunge Canal, &c., were ready for execution when the famine of 1873–4 occurred, but nothing was done on them; and it is well that this was so, as both the projects above mentioned had been insufficiently considered and largely under-estimated.

BOMBAY.

Sir R. Temple mentions first among the essential precautions to prevent famine mortality the preparation beforehand of useful projects of public works to which able-bodied labour can be immediately drafted on the threatening of distress, and in reply to the question whether a scheme of projects prepared beforehand can be maintained, he says: Yes, certainly. This is one of the conclusions universally drawn from the famine of 1874 and 1877. There is now a diligent inquiry being made all over British India regarding projects of utility, with the object of having them ready beforehand. Their preparation is essential if the Government and its officers are to deal with a famine properly and effectually at the outset. If these projects exist, the relief system will go like clock-work from the very beginning, the people will be kept in hand, panic will be stopped, and money will be disbursed without waste. If these projects do not exist, then the most vigorous operations of relief must be lame and confused at the outset. Panics will become almost impossible of prevention. Some accidents to human life from starvation will be sure to occur; and even if by spasmodic energy some moderate success is attained, much money will be wasted. We had great trouble in Behar for want of such projects in 1874. In Bombay we were very fortunate in possessing a complete series of these projects, which had been previously prepared. We have never since ceased to prepare additional projects for eventual use. Something similar has, I understand, been done or is being done in the North-Western Provinces. In the Madras Presidency there were at the outset projects ready in some places, but not in others, and there also, I believe, that a general preparation of projects is going on.

It was fortunate, even providential, that the Government of Bombay possessed, almost quite ready and complete, prepared previously under orders of Colonel Fife, R.E., plans and estimates of many projects for irrigation, especially in the districts of Poona, Sholápur, and Satara. To several of these, accordingly, many thousands of relief labourers were drafted. Some idea of this large operation will be afforded by the following table:—

Name of District.	Name of Canal or Tank.	Highest Number of Relief Labourers employed on it.	Approximate Area of Tank in Acres.	Approximate Area under Command in Acres.	Length of Canal or Main Channels in Miles.	Expenditure during the Famine in Rupees.
Khandesh	Mhaswa Tank	670	421	2,060	6	38,000
Ahmednagar	Ojhar Canal Extension	3,500	—	17,528	9	31,000
Poona	Mutha Canal	18,155	3,681	105,812	70	2,51,000
	Nira Canal	16,789	—	279,680	129	3,94,000
	Matoba Tank	6,420	477	12,412	20	1,73,000
	Shirsophal Tank	5,943	834	10,000	15	1,16,000
	Bhadalwádi Tank	986	336	2,900	15	7,000
Sholápur	Ashti Tank	17,179	2,677	13,324	29	3,22,000
	Pangaon Tank	9,943	6,702	60,000	80	1,34,000
Satara	Nehr Tank	16,836	675	12,800	17	2,92,000
	Mhaswad Tank	15,651	4,014	90,000	31	4,06,000
	Pingli Tank	10,374	349	4,100	11	2,76,000
Belgaum	Gokak Canal	11,946	—	77,319	52	2,17,000
	Gaddikeri Tank	1,231	136	450	2	18,000
Dharwar	Dambal Tank	1,897	421	1,790	2	57,000
	Medleri Tank	1,129	169	1,916	10	26,000
	Hirekerur Tank	1,001	567	562	2	18,000
	Ránibennur Tank	908	268	174	2	24,000
	Total	—	21,727	692,827	502	28,00,000

Mr. Hughes.—In the year 1866 the Government of India called for the preparation of projects for irrigation works, and laid down that one of the main objects to be kept in view was to select those works first for execution which are calculated to prevent the occurrence or mitigate the severity of drought and famine.

Subsequently this Government ordered the assembling of district committees, composed of the Collector, the Executive Engineer, and senior Survey officers in each collectorate, to decide upon the sites to be surveyed. On the recommendations of these committees, investigations for several new schemes throughout the country were undertaken. Several projects were matured and submitted to Government, others were under survey or re-investigation, until in the beginning of 1873 orders were received from the Government of India prohibiting any large works other than those then in actual progress being undertaken, and directing that no new projects for large works were to be prepared or investigated until further experience had been gained of the results of irrigation works in the Deccan, and their remunerative character had been practically established.

In 1874 a review of the progress of irrigation schemes in relation to famine aspects by Colonel Rundall, R.E., was communicated to this Government, whose views on the subject were invited; but, under the stringent orders above referred to, this Government were precluded from making any proposals on the subject. The schemes investigated previous to 1873 were of the greatest possible value, during the pressure in 1876 and 1877, in affording useful and profitable employment, under strict professional supervision, to many thousands of relief labourers. Eighteen irrigation projects were undertaken in various parts

Ch IV Qs. 1.

Bombay.

of the country for relief purposes. Of these, 11 were large schemes which had been investigated previous to the order of the Government of India of 1873. The remainder were small works, principally improvements to existing tanks. The practical utility of large irrigation schemes in affording employment to relief labour was publicly acknowledged, first, by Sir Philip Wodehouse's Government (G. R. No. 426, C. W. 1,000, of 1877), and subsequently in the minute by his Excellency Sir Richard Temple on the famine of 1876 and 1877.

Madras.

MADRAS.

Lieut.-Colonel Mullins.—No schemes of works suitable for execution in the event of famine were drawn up in the Irrigation Branch of the Public Works Department, and no orders to prepare such schemes were issued. In 1866 instructions were given for the investigation of irrigation schemes to be carried out from loan funds, and several were matured and have been partially carried out. Parts of such schemes remained to be executed when the famine of 1876–78 commenced, but they were for the most part situated outside the tract of country affected by famine, *e.g.*, in the Godavari and Kistna Deltas, and the population needing relief was at a distance from them. In the Kistna Delta one work, the Commamur Canal, being on the edge of a tract of country which suffered and not very far from a part of the Kurnool district in which the distress was severe, was started as a relief work, and proved of considerable use.

Sir W. Robinson.—It may be assumed that, so far as any practical bearing of the question is concerned, the periodical recurrence of famines within the Tropics can neither be prevented, nor can their mortal course, I fear, be materially arrested. On their recurrence the specific problem of saving the lives of great sections of the population during the currency of the calamity arises, and the less we complicate it by generalisations, and valuable, yet not directly revelant, inquiries and issues, the better.

The first questions under this chapter relate to preparations for one form of relief of the famine-stricken; viz., works. Of course, this means of relief is of great and primary importance, and I am thoroughly in sympathy with it both as regards preparation and execution. But I confess that I think that, viewed by results of the past administration with its terrible mortality, as well as in the light of the pathology of famine as it affects a declining and atrophied population, it may be found expedient not to rely so exclusively in future on this severer form of relief for saving life in all stages of famine; and that schemes for village relief and other more suitable means of rescue may likewise have to be devised—more especially for the earlier stages of the famine warning. I certainly should advise it. There is much that requires nursing in a famine.

Lists of schemes and works required in each taluk, with plans and estimates, should be in existence in every district as part of the Public Works Department and Collector's pre-arranged disposition for the general improvement of the country; and special famine lists will practically be included in this list if it be kept up to date as respects works executed in the interim, and additions to be made as further requirements develop themselves. Works need not wait for a famine, nor need a famine, in its first stages at least, require special treatment, as respects large and costly works, so long as relief works are reasonably near the distressed population. However, the preparation of projects may well be urged at this time, and experience has shown that embarrassment arises from projects not being in a sufficiently advanced state for immediate execution when required by recent occurrences.

Mr. O'Shaughnessy.—There is no trace of instructions to prepare a scheme of famine relief-works having been received by the district engineer, Nellore, and there were no schemes prepared specially for famine relief in the Nellore district.

Mr. Traill.—Only one large project was prepared in this division, viz., the excavation of a channel, 9 miles in length, for connecting the Kandukur with the Pedda Thippa Samudram and Rungasamudram tanks. This project was examined by the Chief Engineer for Irrigation in November 1875, and he then decided that it ought to be condemned, on the ground that it would never prove remunerative to Government. Subsequently, during the famine, the permission of Government was obtained for the execution of the work; but the Collector objected to it on various grounds, and it was never taken up. The Kurli ghaut was another large work commenced in the previous famine of 1866. An estimate was prepared for completing it; and both previous to and during this famine it was pushed on with, and is now nearly complete.

Ch. IV. Qs. 2.

QUESTION 2.—DIFFICULTIES OF KEEPING THEM UP.

Do there appear to be any difficulties in the way of keeping up such schemes in a form which will be really useful in the future?

SUMMARY.

General opinion that there is no difficulty in keeping such schemes ready for use in time of famine.

Punjab.

PUNJAB.

General Maclagan.—There is no difficulty in keeping up schemes of famine-relief works in a form that would be useful in the future. But there are certain considerations bearing on the practical usefulness of such schemes which require to be adverted to.

Works proposed for employment of people suffering in times of scarcity must be of a certain kind, suited for the ready employment of untrained labour. Earthwork of a simple kind is the most generally suitable description of work; but other kinds of work, as road metalling, stone breaking, kankar digging, carriage of materials, may sometimes be made to furnish useful employment, if this can be done with the necessary facilities for concentration and supervision of the work.

The list of works proposed for famine relief should include, if possible, large works. Small works, which need less time for examination and preparation, are more readily supplied. Small works, if really required, are more easily provided with funds and carried out in ordinary times.

Many or most large works which would furnish employment of this kind are incomplete without certain parts of the works, which are of kinds not suitable for famine relief.

A special scheme of famine relief work cannot be quite independent of other works and ordinary arrangements, so as to be dealt with altogether apart from them, and apart from the consideration of expenditure of ordinary Public Works Funds.

In the Punjab no such scheme is kept up, separate from the general list of approved and sanctioned works, which are waiting for the means of being carried out. Only it should be seen from time to time, as one or other of these sanctioned works is executed and struck out of the list, that the list continues to include works which are in whole or in part suitable for famine relief. It is not to be expected that when any work on the list is much wanted without reference to famine requirements and the money is provided, it should be set aside that it may be kept till a time of famine comes. There must be a certain amount of trust that other suitable works will be found. All works on this list are approved, estimated, and sanctioned, ready to be selected and given out when needed.

Large canals and tanks for water supply or irrigation supply the most entirely suitable and certain means of employment of unskilled labour. Roads and railroads largely embanked or deeply cut provide equally good work of similar kind, but where they run nearly on the ground level, and furnish little work, the people are dispersed over a great length of ground, or have to be frequently moved, and supervision becomes more difficult.

At the present time there are on the Punjab list (apart from irrigation works, dealt with separately, and District works, which are for the most part small,) 95 sanctioned major works (costing upwards of Rs. 2,500 each) and 51 minor, which wait for funds to execute them. Of these 146 sanctioned works 85 major and 49 minor works are buildings and bridges: 10 major and 2 minor are roads and works of miscellaneous public improvement. These last are the works which would best furnish, if required, relief employment. Most of the District works and some Municipal are of the same class. And besides these new works there are the regular repairs of roads, separately sanctioned, and not included in the list of works; on which road repairs, provincial and District together, the estimated expenditure in the present year is upwards of 9 lakhs. Buildings and bridges, though not of the class of works which best furnish employment of the kind required, are not to be altogether left out of consideration. At Lahore, in 1868, the preparation of a large site for a building provided good work for the suffering people, and the earth-work approaches to a bridge at Rawalpindi in the present year.

NORTH-WESTERN PROVINCES.

Mr. Plowden.—There appear to me to be no difficulties whatever in the way of keeping up the schemes referred to in this question in a form really useful for the future.

All that is requisite is, that the plan and estimate for each work should be numbered; that a list of these, an index, in fact, to the works for each district, should be maintained? and that, as these works are taken up as ordinary works and completed, these numbers should be removed from the list by a note to this effect, and a plan and estimate for a new work in substitution of this should be added to the list.

The initiating of a project for a new work would rest with the district and departmental authority, and the project would have to be sent up to Government for sanction in the manner prescribed for ordinary works.

Mr. Lang.—Yes, the risk of waste by reason of there being no regularly prepared schemes ready for relief works is very great. There is, moreover, danger of paupers being left without proper relief during the preparation of projects.

There is not the least difficulty that I can see in utilising the services of the Department Public Works in the preparation of suitable schemes.

The district engineer is a very lightly-worked officer, with plenty of time on his hands, in most districts; and he might well be set to do this work.

The Executive Engineer and district engineer should be required to study the requirements of the division and districts in their charge, and take steps to have the necessary projects prepared. I would not relieve the district officer of the responsibility of providing for the wants of his district, but there is no reason for relieving the Public Works Department of concurrent responsibility. The district engineer, who constantly traverses the district, should be able to decide from a professional point of view the works that are most needed and the best way of carrying them out, and should communicate his views to the Collector and the Executive Engineer.

These projects should be considered year by year, without reference to the budget; they should be thoroughly worked out, plans and estimates prepared and passed, and put away in a pigeon-hole ready for use when wanted.

Some of these projects would be for works urgently needed and financially sound, fit to enter in the budget at any time; others of more doubtful financial or economic value, and only to be taken in hand in case of necessity.

Anyhow, they all ought to be lying ready for use at a moment's notice; and I am of opinion that most district engineers have ample time in their hands for the preparation of the projects, in addition to their ordinary current duties, in years of prosperity.

It is on the Department of Public Works that I would throw the responsibility of initiating as well as preparing these projects, and make that department distinctly responsible for bringing forward suitable works whenever the necessity arises; that agency is, in my opinion, amply sufficient for the purpose.

Colonel Brownlow.—The number of large projects of a really useful character, suited to purposes of famine relief, being necessarily limited, the difficulty of keeping a stock of them in hand will, of course, increase in proportion to the number already executed; but there can be no doubt of the advantage of insisting on the Chief Engineers of Local Governments looking ahead and carefully considering the designs and estimates of such works, having them all ready for execution in the event of famine befalling.

Ch. IV. Qn. 2.

BENGAL.

Bengal.

Colonel Haig.—Supposing such schemes to have been prepared, there seems to be no difficulty in the way of keeping them up in a form suitable for immediate use. They would have to be worked out in full detail; and after going through the regular course and final sanction by the local Government or the Government of India, the papers, plans, and estimates would be preserved in duplicate—one copy in the central office, and one in the divisional—against the advent of the next famine. But all this would involve expense; the getting up of large projects in the degree of detail now required is a costly process. Land plans, too, would have to be made in full detail and be preserved. Changes, however, in holdings and fields might in the course of a few years render these of not much value, and in fact it might be found, when famine came, that a whole scheme which had been kept in readiness for such a contingency had in the meantime been superseded by others which had been carried out in the ordinary course; so that the whole expenditure in getting up the scheme would be simply money thrown away.

Colonel Cadell.—There is no real difficulty in the way of keeping up such schemes, which should be prepared in advance, of the immediate and most urgent requirements of the districts.

Bombay.

BOMBAY.

Mr. Hart.—The schemes being prepared, examined, and recorded with provisional sanction, no difficulty can occur in having them ready for use on future occasions of famine-relief work being required.

General Wilkins.—There can be no difficulty in the way of keeping up schemes for famine works.

Madras.

MADRAS.

Mr. Thomas.—A special Staff of Engineers required for preparing Projects.—As regards irrigation, I think there is no truth in the statement put forth in some quarters that it has already proceeded as far as it can. During the former famine (1866), the selfsame statement was made by the head of the Irrigation Department of this Presidency, with special reference to the then famine-stricken district of Salem. I was then able to contradict this statement by pointing the then famine officer to a project of my own which was expected to store water over an area of about 80 square miles (G.O., 21st January 1865, No. 93). It was thereon examined, of course too late for that famine, and, in consequence of the nature of the examination, condemned. Now another famine has come upon us, and again I pointed to this project, persisting that I was right, and again it was examined, and it was found I was so (G.O., 9th April 1878, No. 883). But it was, so found, too late for any practical use in this famine, because the work was obviously too vast to commence at the tail of the famine, and without fuller detail of plan and estimate.

Minor irrigation works which I projected at the same time, some 13 years ago, when I was sub-collector in that district, came in very usefully for execution in the present famine, and they will be lasting advantages to the country.

What is the moral of this? We want projects to hand, and projects to hand we shall not have if we do not make provision for getting them.

The existing staff of engineers is not enough for the close examination of irrigational projects. Past experience has proved this beyond a doubt. It is time we accepted it and acted on the known fact. The existing staff of engineers is hardly able to cope with the current work of maintenance of ordinary irrigation works, roads, and buildings. For special projects we should have a special staff, whose sole business should be to examine the whole Presidency, not from a local or district, but from a general or Presidency, standpoint; and deciding on what projects will be best for the country generally, will best advance it, as a whole, towards perfection in irrigation, steadily work out those projects, and, as each is perfected, with estimates, plans, and specifications complete, lay it on a shelf where it can be found, and will be ready for immediate execution with no further examination than that of the local changes, if any have been made by time and modification of rates.

Colonel Mullins.—There is no practical difficulty in the way of providing schemes of irrigation for famine-relief purposes, provided the necessary establishment of officers and surveyors be made available for investigating and preparing the projects. So long as the regular Public Works Establishments are inadequate to the efficient performance of current work and duties, of course no investigations apart from the more pressing requirements of these can be undertaken.

Major Montgomerie.—There can be no practical difficulty in the way of providing schemes of irrigation for famine-relief purposes if the necessary establishment is available for the purpose; but with the existing strength of the Public Works Department in Madras, this will not be the case until the Irrigation Branch is separated from the General Branch. In the Madras Presidency, owing to the varied nature of the work to be performed by the executive of the Public Works Department, an entire separation, however desirable, will not be practicable; but a separation of the duty of projecting and designing from that of the execution of the works is absolutely necessary, not only for the preparation of schemes of irrigation for famine-relief purposes, but for the economical working of the irrigation branch, so long as it is required to design new works or suggest extensions and improvements to existing work; in other words, the *personnel* of the Chief Engineer for Irrigation must be strengthened by a fixed establishment of executives, assistants, and subordinates, who probably, on promotion, would resume executive duties; their salaries while attached to the office of the Chief Engineer for Irrigation would, of course, be charged to the projects or schemes on which they were employed, and not to the general establishment of the department.

Many members of the department, although admirable organisers of labour and thoroughly practical men, are not altogether fitted to perform the higher duties of the profession; and it is worse than absurd to require such men to design and project schemes of irrigation merely because they happen to be in executive charge of a division in which there is a likely project. Besides this, it is not possible for any executive, however intelligent and energetic, to do justice to his own legitimate duties, and at the same time to investigate an elaborate scheme of irrigation.

In engineering, as in all other occupations, a proper division of labour is the only rational method of making progress.

Mr. Traill.—The formation of the country is one great drawback to the preparation of any large schemes or projects which would be useful in future famines. The general elevation of the division above the sea averages about 2,000 feet; the country is very hilly and studded with petty tanks, and there are no large rivers from which irrigation canals could be led. The division is intersected by roads, already so numerous that they cannot be nearly all maintained, and the construction of railways is out of the question. The division and taluks are large, and, as a rule, work is so heavy on all, that, should any new and large project be devised, special establishment would be required for its investigation.

Ch. IV. Qn. 2.

Madras.

Question 3.—Class of Works to be included.

Ch. IV. Qn. 3.

What classes of works would be included in them? Would the works differ in character from the ordinary works of utility brought forward for execution from time to time? And, if so, how? Give a practical example of works now considered suitable to be taken up as elements of such a scheme in two or three districts, if possible.

SUMMARY.

The works generally suggested, viz., roads, canals, tanks, earthwork for railways, are of the kind ordinarily carried out from time to time, as means are available, but local conditions sometimes suggest works of a special character, such as the deepening of a harbour, the strengthening of river banks.

PUNJAB.

Punjab

General Maclagan.—The answer to the first three questions in this para. is given in p. 364. The proposals for the works of which the sanctions are recorded on the list referred to are approved by the Government before estimates are prepared. All are thus works of admitted importance or usefulness, which would be carried out in ordinary course if means were available, and which have had to be deferred in favour of works more necessary.

Among major works considered suitable for giving employment of the kind under consideration, may be mentioned:

Metalling and earth-work of the Delhi and Sirsa road in the Rohtak and Hessar Districts.

Sanauli and Sewa road in the Karnál District.

Phagwára and Bunga road in the Jullundur District.

Improvement of Pathánkot and Dunera road in the Gurdáspur District.

Improvement and metalling of road from Chicháwatni railway station to Dera Ismail Khan, in the Jhang and Dera Ismail Khan Districts.

Earth-work of road from Dera Ismail Khan to Dera Ghazi Khan in these two Districts.

Also making and raising minor roads in several Districts, and the general road repairs above mentioned.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

Colonel Brownlow.—Schemes for irrigation, and for providing means of communication either by road, rail, or canal, seem to be best suited for purposes of famine relief. Canal or reservoir projects provide the largest proportion of work best suited to employment of famine labour. Railway schemes are open to the objection of involving a large proportion of expenditure in Europe, burdensome to the finances and quite useless for relief of distress in India; and roads offer, in most cases, too small a section, and too extended a line of work, to admit of economical management and supervision. There would, as a rule, be one main difference between such famine-relief works and productive public works, that the former, though hardly affording promise of direct returns, sufficient to admit of their being classed as productive works, and brought forward for execution in ordinary times, would yet offer a prospect of indirect advantages so large as to warrant their execution for relief of the famine-stricken poor. Many of the reservoir schemes in Bombay, the Betwa Canal in Bunkelkhund, and the proposed navigation channel from Cawnpore to Allahabad, are examples of such works.

Captain Pitcher.—The district engineer must perforce, even within the ordinary working hours, have considerable leisure, which could not be better employed than in surveying and levelling systematically until every portion of the district had been examined with a view to possible improvement. I venture to assert that there is not a district of Oudh in which ample room cannot be found for such improvements as the levelling and bridging of country cart tracks connecting different district markets with each other and with the main lines of traffic; the bunding of nálas, so as to form reservoirs; the embanking of roads running through low lands and otherwise impassable in the rains; cutting waste-water channels from swamps and jhíls, and thereby reclaiming good land for cultivation, &c., &c. Economical and durable culverts can be built from bricks taken from the ruins of old forts, numbers of which are to be found scattered over Oudh; and their excavation would in some cases well repay the labour as a famine work.

So long as there remains any chance whatever of rain falling, which, if the cultivators were close to their fields, could by them be turned to advantage, the advisability of providing work for distressed people in contiguity to their homes admits of no discussion. Tanks and bunds are the most suitable works under such circumstances.

The arguments against providing work for the people near their homes are the difficulty of supervision when works are numerous, small, and scattered, the difficulty of payment, and the unremunerative character generally of such works.

As regards the unremunerative character of tanks, much obloquy has been cast on tank-digging, owing to the fact that several of the tanks dug in former times as relief-works have never yet held water, notably in the Cawnpore district. I cannot but think that this has been due solely to some European officer fixing on the site of such a tank according to his own judgment, and regardless of the opinion of the neighbouring villages. Village people have in their quiet way a great deal of knowledge in such matters, amounting to instinct; and I have never yet seen a zemindari tank which had been dug in the wrong place for holding water. A good tank is an immense boon to a village, whether as a source for irrigation or as a public convenience for watering cattle and supplying household wants.

Apart from this, there are two items of revenue pertaining to tanks—namely, that derived from the sale of fish and that from the lease of the water for water-nut (singhára) plantations, while whenever a tank in which water-nuts have been grown dries up the bed affords a rich vegetable manure.

The zemindars of any village in which Government might determine on excavating a tank would not only give the land free, but would willingly agree to Government retaining all profits accruing from the sale of fish and singhára until the original outlay had been recovered, or to those profits being assessed as land revenue, half to be retained by the zemindar and the other half to be collected by Government along with the jama. Even if looked on simply as interest on the capital sunk, these profits would yield a large return.

The Chinhat tank was constructed by one of the Oudh kings. The zemindars take as much water as they require for irrigation, as much manure as they can carry away from the bed, and cultivate the bed, as it dries, down to the water's edge; but Government takes the fish and singhára revenue. The leases for singhára alone were taken for 1877 for Rs. 500 or so, while the fish are known to have brought in in former years as much as Rs. 6 and 700. For April and May 1877 Rs. 200 were tendered for the fishing in those months alone, and for the six months previous the contractor sublet the fishing for some Rs. 350.

In 1870 I cut a channel over a mile long, at a cost of some Rs. 250 (subscribed by neighbouring villages), to carry off flood water from the Karaila jhíl into the Lúni river. Fish came up from the Gumti by the Lúni into the jhíl; and I was assured that the fishing which had been sold in the year previous to the channel being cut for Rs. 80 sold the next year for Rs. 200, besides which nine stations for irrigation were established on the banks of the channel, and lands which had been almost barren before were put under poppy cultivation. The channel was only opened as a temporary relief, and soon silted up, it being no one's business on my leaving the district work to look after it, while the villagers could not agree about sharing the expense.

Calculating profits at 10 per cent., the construction of the Chinhat tank must have cost Rs. 10,000, which is, I should say, considerably above what it actually cost, as it is formed in a natural depression; and below it in the direction of its waste-water stream is another depression, which could be turned into a tank of similar capacity by an expenditure of not more than Rs. 5,000. I have in my possession a petition from the zemindars in whose lands this latter tank would principally lie, asking that it might be made for them, and consenting to Government repaying itself from the fish and singhára revenue.

It may be objected that it would be long before the tanks got stocked with fish. As a matter of fact, however, whether the spawn comes with the rains, or the parent fish from the subsoil water, it is impossible to say, but come they do, and many zemindari tanks which dry up regularly as the hot season comes round afford an annual take of fish to their owners. Whenever the Chinhat tank dries up, which it occasionally does, the people dig up the bed and find fish in the subsoil water level, to which three species appear to resort on drought coming on. In 1877 Rs. 200 were, as I have already mentioned, offered for leave to take fish in April and May, though the tank was almost dry; and it was stated that on the last occasion of the tank drying the contractor had made a large sum by thus digging. The subsoil water level however, fell so low in 1877 that the people digging were not equally successful.

As to supervision, tanks and bunds are to be found in every direction constructedy the zemindars in a rude but substantial fashion, and far cheaper than would be the case were professional agency employed.

As to the payment of large bodies of men, the zemindars are in constant practice during agricultural operations, and natives much prefer payment by "chittas," as practised by native employers of labour, to any other method.

It is notorious that the cost of relief-works under the Department Public Works, including supervision, is, as a rule, several times that of works constructed by contract at other times; and I believe that the ordinary cost may, on an average, be safely multiplied by five.

I should leave it to the villagers themselves to select a site, and I should get a rough estimate of the number of people likely to resort to the work and for how long a period.

Call the period three months and the probable number 3,000, and, excluding the cost of Department Public Works supervision, take the multiple at three.

I would then design a tank or tanks of such cubic capacity as could be in ordinary seasons excavated by 1,000 strong and skilled labourers in three months for (say) Rs. 6,000. I would then point out to the zemindar that to get the work done three at least of these feeble folk must be employed in the place of one strong man, and promise that, if the work were completed within the time, three times the ordinary sum would be paid, with a further premium if completed within less than thsee months, warning him at the same time that if he employed strong men, to the exclusion of the weak, the ordinary rate would alone be paid. Several of such works opened out simultaneously in a tahsíl, and frequently visited, would ensure labour near their homes for large numbers of people, and be of permanent benefit. There would probably be a mixture of strong men as well as weak; but the strong, being in a position to earn wages, would support at their own homes many of those aged and infirm people who, when their supporters are drawn away to distant works, are forced either to resort to the poorhouses or else die at home. Channels might be dug under this system to carry the flood waters of rivers into reservoirs in waterless tracts. If, at the same time, cloth were bought from the Kuláhás and Joeris, as recommended in Chapter II., and leather work from chamárs, the people would be kept in their villages.

I believe that in some districts it has been found difficult to provide sufficient work for people in time of scarcity. Advantage might be taken of such times to fill up the stagnant ponds and the excavations to be found in every village, and from which the earth for building the village was originally taken. This would be a great sanitary improvement. The earth could be taken from a new tank, dug to the north or south of the village, and if possible below it, so as to receive the drainage.

Mr. Macdonald.—Railways and roads, metalled and unmetalled. As regards the Tarai, the extension of the railway to the foot of the hills from Muadabad and Bareilly may be instanced.

Mr. Barstow.—Earthwork in connection with new lines of communication, railway embankments, and canals, improving existing lines of communication, and collecting metal for first-class roads.

They would only differ from ordinary works of utility, inasmuch as the portions requiring skilled labour would be in abeyance; thus, in the case of a road, the earthwork required for the embankment might be carried out, and the bridges and culverts allowed to stand over.

As an illustration, the new proposed Nagra, Rasra, and Korantadih road may be given, a portion of which would lie in the Gházipur and a portion in the Azamgarh district. The sanction of the local government under section 17, Act X. of 1870, would be necessary to enable the Public Works Department to enter upon the land, and this could not be done until 15 days from the publication of the notice required by section 9.

Practically, no one would offer any opposition in rural districts to their land being entered upon previous to the expiration of the notice in such an emergent case as famine.

Major Liston.—There are two classes of works which in this district are suitable for execution in the event of famine. In the first may be entered what in this question are called ordinary works of utility; *i.e.*, road making and road improving; and in the second, works differing in character from road work, that is, tank embankments.

There is such a large proportion of red soil in this district that road making or road improving is a work that can be carried on by unskilled labourers with profit to Government.

Tank embankment is a work which I should like to see commenced without any famine as an excuse, for no better precaution against famine could be taken as regards the Lalitpur district than building tank-bunds. In the famine of 1868-69 the villages with tanks were comparatively well off: sattia rice was grown round the edges of the tank, and no cattle died of thirst; and again this year, a year of short rain, wherever a tank exists the wells are well filled.

No work is easier looked after or more fitted for unskilled labour than the earthwork of a tank embankment.

In 1868-69 the mistake made, in my opinion, was that embankments were thrown across streams (nálas), which in the rains were raging torrents with strength to sweep away all but the strongest masonry; the consequence naturally being that the earthwork, unprotected by masonry or by rough stone facing, as embankments were protected in the time of the Gonds, gave way before the first work of the stream.

Besides new embankments, I would set the people to repair old existing bunds in villages wherever it were possible to give supervision. This is a work which, though it would not at once show a profit in rupees, annas, and pies, would profit Government by enlarging the cultivated area, and bring in more cultivators, all of which would tell at the next settlement.

Mr. Cornwall.—The works selected for execution in times of famine have usually been those requiring a large amount of earthwork, such as raising roads, making approaches to bridges, and such like. All works of this kind must be such as will employ unskilled labourers to a large extent. Those sanctioned for this district in the event of last year's distress increasing were the improvement of the Mogal road from the Fatehpur to the Etáwah district, and the improvement of the road from Sikandra through Mangalpur, Jhinjak station, East Indian Railway, Rasúlabad, and Kukwan to the Grand Trunk Road at Bilhaur, where it is in contemplation to have a station on the Cawnpore-Farukhabad Light Railway. These works were selected at the time on account of the parpagans through which they pass being more liable to distress; but, in addition to them, there is at present no lack of similar works.

Mr. Watts.—I consider that the classes of works that should be included in any such schemes are:—

1. Roads.
2. Cutting and embanking for lines of railway.
3. Irrigation projects.

These would differ in character from the ordinary works of utility brought forward from time to time in that they would be on a much larger scale, being calculated and provided to give relief to a great number of people, paid most frequently at rates much higher than those given for ordinary labour.

Good illustrations, among the works now considered suitable to be taken up, are:—

(*a.*) The work of the Cawnpore and Farukhabad Light Railway, running through the Cawnpore and Farukhabad districts, and hereafter to be protracted through the Etah into the Aligarh district.

(*b.*) The rectification and alignment of the Káli nadi, in the districts of Etah, Mainpuri, and Farukhabad.

Mr. Sells.—I presume that it is intended that only large works should find place in the scheme alluded to in Question I., and the only two such works that I can suggest for this district are—(1), a railroad to Bijnor; (2), a railroad to Roorkee; and (3), the adding a second line of rail to the Panjáb and Delhi line throughout its course. There are some drainage projects which have been under contemplation for some years past, and the desirability of which, for all reasons, must be acknowledged; notably—

The Shámla nála project;
The Fatehpur Aldi project.

The raising of the main line of Kucha road, in the district, is also a work admirably adapted for relief purposes; and I have already proposed this, and it is a work of great utility. These latter works, however, would afford but little relief in a time of very severe scarcity, much less of real general famine. Nor am I at the present time prepared to suggest any other large works than the two lines of railway before noted. But in any such scheme it would be advisable to avoid, as far as possible, works requiring—at any rate, in the initiation—a preponderance of skilled labour.

The works should be such as to afford easy labour for men, women, and children; by easy, I mean labour such as requires no professional or handicraft skill. Earthwork is, of all classes of works, unquestionably the best suited for relief purposes. The excavation of canals and drainage lines, and the raising of roads, therefore, furnish the best kind of labour.

BENGAL.

Col. Haig.—The class of works suitable for such schemes would be the ordinary works of utility, principally earthworks. There are two or three small irrigation projects on the Bagmutty and other rivers in Northern Behar, which have been rejected by the Government of India as unsuitable for execution in ordinary times, which might do for this purpose. There is also the extension of the Main Western Canal on the Sone, which was actually begun as a relief-work in 1874.

Col. Cadell.—The classes of works which would be included in the schemes are road, embankment, drainage works, and tanks, also railways and irrigation works in exceptional cases. They would not differ in character from ordinary works of utility. The following are examples of works now considered suitable as elements of such a scheme in three districts; viz.:—

(*a.*) Moorshedabad. A railway from Bhugwangola through Kishnagurh to Ranaghat on the Eastern Bengal Railway, also from Ranaghat to Jessore.

Ch. IV. Qs. 3.

Bengal.

(b.) Nuddea. Embankment from Jeagunge to Bhugwangola.

(c.) Jessore. Improvement of the drainage of the town of Jessore, and of the river Bhyrub, which flows past it.

The above would be provincial schemes; one schemes would be local, and would be worked out by the local authorities. (Road-Cess.)

Bombay.

BOMBAY.

Mr. Hart.—Irrigational and water-supply works, in the shape of canals, tanks, and embankments, are the most suitable. The works might be held to differ from those sanctioned ordinarily, inasmuch as the returns expected might be less, and indeed in certain cases they might be nil, being merely useful works, expenditure on which in payment for work done would be preferable to gratuitous relief or the execution of less useful works for future famine protection.

I should give as a practical example of elements desirable still to be further investigated and elaborated—

The series of large storage tank sites under consideration in Kaladgi.

The Malsiras Canal from the Nira right bank.

The Sina Canal in Ahmednagar and Sholapur.

The Godavery Canal in Nasik.

Major-General Wilkins, R.E.—Such works would not differ in character from ordinary works of utility which are brought forward for execution from time to time; but hitherto it has not been the policy of Government to undertake as famine work any other class of work than earth-work. Now very few public works are comprised of earth-works only, although, buildings excepted, most public works include earth-works. Canals, tanks, and roads are those public works in which earth-works comprise the bulk of the work; these works, therefore, are those best adapted for famine works. Nearly all public works have works other than earth-works, and it would not be advisable to prepare projects so far as earth-works only are concerned, and to leave out other works necessary to the completeness of such schemes.

In my opinion, if it were thought desirable that schemes for works should be kept ready for execution in times of famine, such schemes should be made complete in every respect, and include all works necessary for their completeness.

The prevailing opinion that masonry works are unsuited for the employment of the people, because skill is needed in the construction of such works and the cost of masonry works exceeds that of earth-work by reason of the materials used, is not, in my view, a sound one. I will take, for an example, a large public work now under construction, the wheeled carriage road at the Amba ghat, which is to connect Kolhapur in the Deccan with Ratnagiri in the Konkan. This work, the construction of a mountain road eight miles in length, will cost Rupees 2,80,000, the whole of which amount will be expended on two items of work, namely—earth-works, Rs. 1,80,000; masonry works, Rs. 1,00,000. The cost of the masonry works, therefore, is, to the cost of the earth-works, as 5 to 9.

Now, supposing this work to be started as a famine work, and the masonry work not permitted to be touched, at a first view, it might be supposed that out of 14 parts nine would be available for famine-work labourers.

A closer examination, however, would reveal that the setting aside of the masonry five parts would entail a considerable diminution of the nine parts earth-works. The five parts bridges, culverts, and drains all require the earth-works of the roadway to be carried up to the formation level, or grade, of the finished road passing over those constructions.

Without the masonry works a great portion of the earth-works must be left unfinished; so that it may be said only a portion of the estimate of the earth-works of this large work is available as a relief-work; the other portion, by which alone the first portion of the earth-works would come into any use whatever, must lie by to some future day when Provincial funds may be available for its execution with the masonry works. If undertaken the following year, how will the revenue of the country benefit by the postponement of the expenditure? If set aside for years, each yearly rainfall will resolve the banks and cuttings into their original configuration, and when at last the work is undertaken in consideration of the money already expended it will be found that the cost of completing it does not fall far short of the original estimate.

Masonry works comprise two items,—"labour" and "materials." Taking, for instance, what is called "rubble masonry work," and examining into a detail of the items which collectively unite to form that description of work, it will be found that where 100 cubic feet of rubble masonry costs, at an ordinary rate, Rupees 24, this amount is distributed as follows:—

Labour - - -	Rs. 11
Materials - -	„ 13
	Rs. 24

So that, with 5 to 9, the proportion of masonry works to earth-works in the estimate for the Amba ghat road, the 5 parts are divisible into 24 parts, of which 11 parts represent labour and 13 parts materials.

Reverting then to the Amba ghat estimate of Rupees 2,80,000, no less than Rupees 2,25,834 are for expenditure on labour, and Rupees 54,166 only for expenditure on materials.

It will be found, on further examination, that the amount for expenditure on masonry materials is itself in reality only labour.

The Rupees 13, the price of materials for 100 cubic feet of masonry, is for the purchase or cost of

	Rs.	a.
Stone - - -	7	4
Slacked lime - -	4	8
Sand - - -	0	8
Sundries - - -	0	12
Rs.	13	0

These items all represent labour: the stone to be quarried and prepared; the limestone to be collected; the sand to be excavated. The charcoal required for burning the limestone represents labour; the powder for blasting, country-made, represents local labour; and the only items which can be regarded as foreign to local labour are the purchase of steel for tools, and possibly the Government fees for the forest wood of which the charcoal is made.

Hence it is no exaggeration to say that the Amba ghat mountain-road work, as a complete project, with its earth-works and its masonry works, would form an excellent relief-work in its entirety. To adopt projects of this kind as relief-works, and to set aside the masonry works as unsuitable for execution during times of famine, is only to emasculate schemes for no sufficient purpose. Therefore I contend that the question put in para. 3 of Chapter IV. of these papers, "Would the works differ in character from the ordinary works of utility brought forward for execution from time to time?" should be replied to in the negative. Setting aside the construction of buildings for occupation, which require a large proportion of skilled labour, all engineering works of general utility are suitable as relief-works.

If Government would sanction road projects in their entirety, setting aside, as indeed is done in ordinary

times, the larger bridges, then I am satisfied that the results obtained at the close of a famine would be materially enhanced in value. The small drains and culverts would be taken in hand with the earth-works, which would be carried up to them, and enable the road banks to be brought to proper grades, to be finished off the next season.

The most valuable piece of road-work carried out by famine labourers in the Southern Division is a length of three miles of ghat road on the Belgaum and Kaladgi road. General Kennedy approved of my proposal to carry out the masonry works on the Hunmunhutti ghat. The old ghat road had gradients as steep as 1 in 10, and cart loads on the road had to be regulated by the tractive energy of a pair of bullocks working on such grades. An entirely new ghat road was made by famine labour in 1877, including the necessary masonry culverts and drains.

George Kennedy also approved of masonry drainage works in the fort of Bijapur, designed to benefit the new station to be established at that beautiful city. Unfortunately, the executive engineers who had charge of the district works acted on general orders to relegate the people to tank work, and thus the drainage works fell through, barely touched. It was a great opportunity lost of turning famine labour to excellent account.

The completion of the road between Belgaum and Kaladgi, as a properly embanked, bridged, and drained road, would form a good scheme; the construction of a bridged and drained road from Gotoor, on the mail road to Gokak, would be a good scheme; and these could be easily added to if desired.

One project completed,—and projects sometimes take years,—they should proceed with another, and so on, till the country is all gone over; and several parties should be working at once with one controlling head, who should be the most practical widest-viewed engineer the Presidency can find.

I made exactly these proposals to the then Famine Commissioner, Mr. Ellis, 12 years ago. If they had been accepted and worked on then, we should not have been in the straits we have been in the present famine, and should have spent the money we have spent much more to the lasting benefit of the country.

Colonel Anderson.—Railways and works of irrigation. They would not differ in character from ordinary works. The Gadak, Hubli, and Karwar Railway, in the Dharwar collectorate. A branch railway from the G.I.P., breaking off from it at some point near Sholapur, and proceeding south through or near Bijapur and Bagalkot to Gadak in Dharwar. A branch from the G.I.P. from Barsi Road station to Barsi. Repairs of existing tanks in the Dharwar collectorate, of which there are many improvable.

MADRAS.

Mr. Thomas.—Irrigation—Location of Works.—I wish to lay stress on the position I take that these projects should be initiated and examined, not at all with reference to the possible necessity of finding labour in certain localities near the homes of the possibly starving, but solely with a view to bring the country, as a whole, into a famine-prevented condition.

The projects should be large, as large as possible, not small ones spread about the country to give labour. Small ones cannot withstand long droughts; witness how small tanks ran dry all over the country. Large works are comparatively cheaper to construct than are small ones, and therefore yield a better percentage on outlay; the thorough supervision of labour on large works is easier than on a multitude of minor works; large works alone have any pretension to be considered famine-preventive works.

Out of the famine-preventive license tax which we have recently imposed certain of these famine-preventive works should be taken up in years of plenty, so as to have them completed beforehand and preventing famine by their produce. Others can be kept for work in famine time. But the latter should be the secondary object, for famine will not come where it has been prevented. None came in highly irrigated Tanjore, which was consequently the granary of the South, pouring out its extra produce by cart and rail faster than the rail could carry it away.

But first in the list of projects should stand such as have for their object the perfection and stability of existing systems of irrigation; afterwards should come new projects.

In the first category stands, amongst others, the Cauvery Delta. On this subject I quote what I have already written elsewhere:

"It will be seen from my letter, No. 4,190, dated 21st instant, that in the earlier part of this season this district suffered severely from disastrous floods in the Cauvery, which caused breaches and tore away soil and seed-beds, and caused the loss also of the proper season, so that the cultivators were heavy losers from the sudden over-supply of water. Now, later on in the same season, they are still worse losers from widely withering crops. If the excess waters of the earlier season—waters that could not even get to the sea in their violent haste—could have been stored up and given us now, both evils would have been averted, and all the best lands of this well rail-tapped granary of the South would have borne full crops for the benefit of the famine-stricken districts around.

"2. This can easily be done at a site which I can point out; and this seems an opportune time for the Government to take up a large famine-relief work which shall, at the same time, be also a famine-preventive work and a flood-preventive work for a district in which the lands are amongst the most valuable in the Presidency.

"3. The site is in about latitude 12·9 by longitude 77·48. I could draw it out more or less approximately from the map, if desired, or I could, by a week's absence from my district, personally point it out exactly to any engineer officer; and this latter plan would, perhaps, be most satisfactory. I came on it when I was sub-collector of Salem.

"4. As no levels were taken, I can only gauge roughly, from the eye and the memory of some 10 or 12 years ago, that it would submerge about 100 square miles, may be more.

"5. The land to be submerged was, as far as I saw it, poor and uncultivated.

"6. The site is all natural basin, hill-locked on a sides but the one draining into the Cauvery. That side I would dam across, and provide with a sluice for returning the water to the Cauvery when it was wanted.

"7. The Cauvery there falls rapidly through rocky country, so that no expensive anicut would be wanted, and but a very short length of channel would suffice to attain sufficient elevation for filling the reservoir to almost any desired depth, say even 100 or 200 feet, if really necessary.

"8. I would so locate the channel that only when the river is above a desired flood level would it relieve the river by drawing off the surplus, and, without returning, cease to draw off as soon as the river fell below that flood level.

"9. It would be easy to arrange that the channel should also spontaneously cease to receive as soon as the reservoir was full, so that no expensive masonry

Another work is the Unnamalunka reservoir, in the Godavari district but outside the Delta. Estimate about Rupees 9,00,000.

Area commanded -	128 square miles.
Capacity of reservoir	4,320 millions of cubic feet.
Quantity of water expected to be stored annually -	12,096 do. do.

As a flood moderator it would be useful to the Delta, and it might irrigate 30,000 acres, or possibly more.

This project will probably be brought forward for sanction on its merits as a remunerative work.

The minor rivers in the Nellore district are capable of utilisation to a much greater extent than at present.

River, channel, and reservoir projects in most districts.

River-embankment works.

Enlargement of existing tanks, channels, &c.

Colonel Foord.—The works to be carried out in times of famine should be of precisely the same kind as those that are carried out in ordinary years. On no account should any work be undertaken that was not likely to be useful. The works to be undertaken would, therefore, be buildings, roads, canals, tanks, and repairs of the same. It is not necessary that the construction of large bridges, anicuts, barracks, or cutcherries should be given up in famine years. The expenditure on such works, if they are really wanted, will not be thrown away. There does not seem to be any reason for leaving skilled labourers, as carpenters and bricklayers, unemployed at such times; for not only do such men, receiving from eight to 16 annas a day, each support out of his wages three or four persons, but wherever they are employed they necessitate the employment of more than 10 times the number of unskilled labourers. Buildings are, therefore, quite as suitable works for relief purposes as any others, and no kind of works is more accurately measured and valued after completion. It having been already stated that the class of works to be selected should be the ordinary works that appear in Budgets year after year, it is hardly necessary to specify any works; but it may be mentioned that one of the works taken up for relief purposes during the present famine in the districts of Nellore, Chingleput, and South Arcot has been the extension and improvement of the Coast Canal, several sections of which south of Madras are still in an incomplete state and available as useful relief-works. In the Malabar district there is still available the completion of the inland navigation from Cochin to Tellicherry. In Coimbatore the complete repair of the main line of communication between Karur and Palgaut. In Kurnool the completion of the main road from Kurnool viâ the Nandicanamah ghat to Cumbum and Nellore. In the Salem and Bellary districts there are several irrigation projects that have been under consideration for several years.

Mr. O'Shaughnessy.—Works of irrigation and communication would be included in schemes for famine relief, the latter to include canals, railways, and common roads. The works of irrigation should be taken up in preference to others. These works would not differ from the ordinary works of utility.

(1st.) There are in the district 734 tanks, exclusive of zemindari works, irrigating 192,455 acres; about 425,000 people, or one-third of the population, are dependent on the crops grown under them for food and life, and they yield a revenue of 8,93,524 Rupees yearly. About one-fourth of this number of tanks are in need of repair; the repairs are deferred partly for want of funds, partly for want of labour, and partly for want of establishment sufficient to estimate for the works in a proper manner, or to supervise efficiently the labour available.

(2nd.) There is the Sungum project, estimated to cost 27 lakhs. It would *secure* the irrigation of 94,000 acres of land, which would produce food sufficient for 250,000* people for one year. It would secure the existing revenue of about 2¼ lakhs, and yield an increase of revenue of 2¼ lakhs.

(3rd.) There is what is called the Soméswaram project, designed by the Madras Irrigation and Canal Company, which comprises a navigable canal from Cuddapah to the sea, about 100 miles in length, and which would irrigate a vast quantity of land in its course; this project has been given up for want of funds. There are six small rivers running through the district, besides the Pennair, to which the two last-mentioned projects belong; they take their rise in the Eastern Ghats, and flow direct to the sea, a distance of about 60 miles; they run almost parallel to each other at distances of about 20 miles apart, and nothing has been done to this day to utilise their waters. There are 300 miles of main roads still required to complete the system of inland communications required in this district, and about 50 miles of branch canals are required to connect large towns (including Nellore) with the Buckingham Canal.

Major Mead.—The works to be taken up during times of famine would not differ in character from those ordinarily desirable; but it might frequently be advisable to execute for relief purpose works which would not be of a sufficiently remunerative kind to justify their execution under ordinary circumstances; but during famine, as at other times, a more remunerative work should have the preference over one less so. The difference is one of degree and not of character. The very best class of works are irrigation works involving heavy embankments and the excavation of canals. They are *per se* the most convenient for the employment of large bodies of labour, and have the additional advantage that it is always possible to find works of this class whose remunerative character is beyond question; the time when all possible remunerative works in Salem or Coimbatore shall have been completed is so far distant as not to be within the limits of practical consideration. Speaking generally, it may be said that, the larger the work, the better it is for relief purposes.

Collection of metal for the repair and improvements of roads has been greatly employed during the late famine; it has the advantage of being easy to take up and of requiring little or no previous preparation; but it is not, in itself, a work of great permanent utility, and no very large number of labourers can be employed on it within a small space. It would never be thought of except in the absence of available irrigation works.

The construction of new roads is the very worst form of relief-work; firstly, because the numbers which can be concentrated on roads are very small; and, secondly, because they involve a permanent maintenance charge which the district will, in all probability, not be in a condition to bear.

As practical instances may be mentioned in the Salem district the Kistnagherry reservoir on the Pooniar, the Goodoomullay reservoir on the Swatha Nuddy, the Paniar reservoir on the river of the same name, and the Kudavany project in the Tripatur taluk; of these the two first are works which ought to be taken up on account of their permanent value, irrespective of famine; the existence of a famine would only supply an additional motive, and provide

* I conceive a fairer estimate would be,—produce of an acre half a ton of rice per annum,—allowing very little over 1½ lbs. per head per diem, half a ton would feed two people for a year; so 94,000 acres would feed 188,000 people for a year.—G.A.B.

an additional opportunity, for their construction. The two last are works whose execution would be of doubtful policy in ordinary times, but which might well be taken up for relief purposes.

In the Coimbatore district the construction of reservoirs on the Bhowany and other tributaries of the Cauvery would be of permanent value in regulating the supplies to the channels from the Bhowany and Cauvery rivers, and would, from their nature, be useful works for relief purposes, though their direct return might not be sufficient to justify their construction in ordinary times. If waste of water can be put down, several channels from the Ambravutty and other rivers might with advantage be extended.

Lieut.-Col. Prendergast.—New roads: improvement of existing roads, new projects of irrigation, and the extension or improvement of irrigation works. These works need not differ from the ordinary works brought forward from time to time, but they may differ in this way; a project for the restoration of a tank, for cutting a new channel to the tank, or for the extension of an irrigation system by cutting additional channels and improving a series of tanks, may be roughly surveyed, approximately estimated, and discarded, as not likely to be sanctioned. But if the surveys and levels were to be carried on accurately, and the estimate carefully made out, a project would be in hand that might be looked upon as a suitable famine-work, from being of considerable utility, though it would not be accepted for execution from the usual budget funds. The difficulty of obtaining these schemes is that the executive staff has full employment on their usual current duties, and an officer will naturally give up the investigation of a scheme which is to be laid by for future years, when he has ample occupation on the works that he will himself carry out. In the North Arcot district an estimate was sanctioned some years ago for a road from Wandiwash eastwards to the edge of the Chingleput district, to join a road that runs to the Cheeun Salt station on the coast. The execution of this road was deferred, and the Local Funds could not provide the money to open it out. The work was sanctioned provisionally as a famine-work, in case of more work being necessary, in the Wandiwash taluk, but nothing was done.

Lieut.-Col. Hunter.—The great desideratum seems to be the employment of unskilled labour, massing it as much as possible, in order that superintendence may be of the cheapest possible character. Works eminently suited for this are railways, roads, and canals, as far as earth-work and stone-breaking are concerned, and differ from works of ordinary utility, as any parts of the scheme requiring skilled labour and professional superintendence, bridges on roads and railways, sluices and aqueducts, &c. on canals, would have to be deferred.

The Wontimitta-Nellore Railway Branch may be taken as a work giving labour in quantities in two districts,—Cuddapah and Nellore.

Major Tibart.—The class of works to be included in the scheme should (in my opinion) in no way differ in character from the ordinary works brought forward from time to time. In most districts there are works which it would seem to be desirable to carry out; but owing to want of establishment of surveyors their investigation is frequently postponed to a more convenient season. In Trichinopoly it would probably be well to have the famine labourers at work near the river, where there would always be found a good supply of water. The famine labour might here be usefully employed in strengthening and improving the river-embankments as well as the banks of the irrigation channels, which may be said to run more or less parallel to the river. Near the river, also, materials for the construction of famine sheds are really available. In this district, there are a few projects, some ready and others in an advanced state, which could soon be made fit for execution—

Vengoor project (before the Government of India) - - -	Rs. 14,000
Kodunthorai tank project - -	„ 15,000
Adappumpullam drainage - -	„ 7,000
Karakkurichi tank - - -	„ 4,000

all near the river.

Total estimated cost of all these, about	„ 40,000

Besides these, there is an estimate for improving the river-embankment in Udaiarpolliem taluk to the amount of about 8,000 Rupees, and more estimates in connection with river-embankments could readily be made. It may here be remarked that buildings, both military and civil, are by no means to be despised as works for affording relief during at any rate the earlier periods of famine distress. In all large military stations (Bengalore, for instance) the Executive Engineer has a long list of works which have been called for by the military authorities, and for which careful plans and estimates have been prepared, but for which, during ordinary times, the Government have been unable to provide funds. When famine approaches it has been usual for Government to put a peremptory stop to military new works which are in progress. It seems to me that the works then in progress should, on the contrary, be pushed on, and that others should be selected for execution from the list above mentioned, with the view of providing labour at the head-quarters of the division, where there are certain to be large numbers of men who would shortly become destitute. Works of this nature would give employment to skilled, half-skilled, and unskilled labour. It might be said that the former classes should be required to work as common labourers; but they are, I submit, entitled to consideration, and it should be remembered that by their earnings they are enabled to support their families; moreover, that by compelling skilled labourers to work as common coolies we demoralise them and bring their families on the works, whereas if the bread-winners are enabled to work at their trade, the Government would not have to provide work for these dependent upon them. It should also not be forgotten that, in an ordinary building, the number of unskilled persons employed is eight or 10 times the number of skilled and half-skilled together.

Captain Brockman.—Roads, bank-repairs, tank-repairs, and the construction of new tanks or reservoirs. No. In Tanjore district, the construction of reservoirs in the dry taluks of Pattukotai and Mannargudi could be taken up as schemes of utility and importance.

Mr. Rundall.—The works would not differ in character from ordinary works of utility, but if the schemes were such as would prove financially successful, their execution is sure to be urged on the ground of the material improvement they will afford; hence, it is probable that only works whose financial success is doubtful would be kept in the category of purely famine-works. I would instance the Shanmuganadi reservoir project in Palni taluk and Gollapuram reservoir in the Periyakulam taluk, of Madura district, as one of this class of works.

Mr. Traill.—Partly answered above. The most useful works would be road-repairs, deepening and clearing out of spring-channels and earth-work to tank-bunds, also the excavation of wells for irrigation purposes. With the exception of the first mentioned, they are all open to the objection that the works are not of sufficient magnitude to employ any large body of coolies on one spot, and so greatly increasing the staff of supervising officers who would be necessary. With the exception of the excavation of wells, these works all resemble in character those for which provision is ordinarily made in our budget.

Mr. Simson.—A very suitable work on which to employ sufferers by famine would be the improvement

of the port at Cocanada and an extension of the canals and roads in the district. The labourers might be deported from the famine-stricken districts for this work, and would thus be placed in a province always well provided with food, and to which, if the local supplies were insufficient, grain might be easily and cheaply brought from other places by sea.

Question 4.—Authority for their Execution.

Should the works in such a scheme be looked on as immediately available for giving employment as relief works at the discretion of the local governments, or under what circumstances might the authority of the Government of India be held to be required?

SUMMARY.

Opinions differ. Generally speaking, it is said that district works might be left to the discretion of the local government, but that larger works might require the sanction of the Government of India. In Bombay the chief engineer advocates the absolute discretion of the local government in such matters.

PUNJAB.

General Maclagan.—No application for authority of the Government of India would be required for carrying on any of the provincial or district works as relief-works. They can be looked on as immediately available for giving employment of this kind at the discretion of the local government.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—I would insist on necessity of sanction of Government of India to commencement, for purposes of famine relief, of any schemes which would involve expenditure of Imperial funds, or require the sanction of Government of India in ordinary times.

Mr. Sells.—I do not think that such schemes could be kept up for each district separately.

The district of Muzaffarnagar, for instance, might furnish work during a moderate and short-lived scarcity, but I know of no works that could afford employment to the aggregate poor population in the district during a long period of famine or even severe distress. The extension of railways and canals seems of all schemes that which offers the maximum amount of labour, combined with maximum utility and profit to the State. If such a scheme is really to be adopted, I would suggest that surveys be made and plans prepared showing the most feasible methods of extending irrigation to tracts hitherto dependent upon rains or wells, and of connecting the various centres of trade throughout each province separately.

I do not think it would be possible to work out such schemes for each district separately, or, in the case of *very severe* famine, to confine the people within the limits of the district. It would be in many cases advisable to draft the people off to large works where labour was most required. The maturing and maintenance of such schemes must, I think, devolve upon the head-quarters staff of the Public Works Department.

Mr. W. C. Plowden.—The test in such a matter appears to be the fact of the provincial government having allotted, or being able to allot, funds.

If they cannot do this, or have not done so, it would be necessary to obtain sanction from the Imperial Government for the opening of such works.

Major J. Liston.—I can only answer this question as regards this district, and I think it should rest with the local government to sanction all works.

As already stated, famine here is caused by the failure of the kharif crops, and comes on with so little warning that the delay in obtaining the sanction of the Government of India would in all probability cause loss.

Moreover, it is not likely that, in such a sparsely populated district as Lalutpur, any works of very great magnitude will ever be started.

Mr. J. G. Anderson.—District schemes should be left to the discretion of the local government, and provincial ones to that of the Government of India.

Mr. Edwards.—The works should be immediately available for relief at the discretion of the local government.

BENGAL.

Colonel Cadell.—The authority of the Government of India would be required for railway works; all others would be sanctioned by the local government.

Colonel Haig.—With regard to the question whether works intended for execution in time of famine should be looked upon as immediately available for giving employment as relief-works at the discretion of the local government, it would probably be necessary to fix some money limit within which the authority of the Supreme Government would not be required. For all larger schemes the special sanction of the Government of India might be necessary.

Ch IV. Qn. 4.

Bombay.

BOMBAY.

Mr. Hart.—I should advocate the absolute discretion of the local government in such matters, when prompt action is so essential to success in dealing with a famine.

Colonel Anderson.—Such works might generally be taken up at the discretion of the local government on the Government of India sanctioning famine-relief works being undertaken. If the work and consequent expenditure were large and formed part of a railway system, the sanction of the Government of India would be necessary, but it might previously be conditionally ascertained.

Madras.

MADRAS.

Lieut.-Colonel Mullins.—The selection of works for famine purposes should rest with the local government; more especially is this necessary at the commencement of relief operations, when delay in taking action is fatal to efficient arrangements.

Major Montgomerie.—Schemes of irrigation should not as a rule be taken up for famine-relief purposes until properly worked out, but whether fully matured or not their commencement must be left entirely to the discretion of the local government.

Colonel Foord.—In reply to Question 4 it may be stated that as necessity for famine relief does not suddenly arise, but can always be foreseen months in advance, there will always be time to obtain sanction for the works proposed to be carried out, in accordance with the usual practice in such cases. Much of the distress at these times might be relieved, at first, by increasing the ordinary grants for repairs of roads and repairs of irrigation works, estimates being prepared for works before expenditure is incurred.

Major H. R. Mead.—The most convenient plan would probably be for the Government of India to sanction a total grant (according to the magnitude of the distress) for famine-relief purposes, in addition to the ordinary budget grants.

The schemes, being *ex hypothese* prepared beforehand, should be *provisionally sanctioned* under precisely the same rules as ordinary budget works. On the occurrence of famine or severe distress a total limit might be fixed by the Government of India, according to circumstances within which the local government would sanction for execution works the estimates for which had previously been provisionally sanctioned.

Lieut.-Colonel Prendergast.—Schemes that have been sanctioned or approved by the local government should be at once available as relief-works at the discretion of the local government. The authority of the Government of India might be held to be required in the case of a project having been previously looked upon unfavourably by the Government of India, or in the case of a deviation from the order of priority of works in a general scheme, such as a system of railways as mapped out by the Government of India.

Ch IV Qn 5.

QUESTION 5.—RESPONSIBILITY FOR THEIR MAINTENANCE.

If severe drought calling for the employment of labour on a very large scale, and in an exceptional manner, occurs at comparatively long intervals, how will it be best practicable to arrange for suitable projects, which, though suspended, must yet be fit for early execution? On whom should the responsibility of maintaining such schemes in an efficient state rest, and how could it be enforced?

SUMMARY.

The maintenance of such schemes should rest with the chief engineer or with the commissioner or collector in communication with him.

Punjab.

PUNJAB.

General Maclagan.—The best practicable way of providing for the requirements of such a case as is supposed in this paragraph 5, as well as for others, seems to be by the course above described. A large work really required would not be kept back from execution at any time on account of its being a particularly good work for giving employment to the distressed people in time of scarcity. It may happen that sometimes no suitable large work has been proposed or can be thought of, in some particular part of the country, and advantage would have to be taken of large works elsewhere. For some time to come there seems good prospect of railway and canal works being available without needing to abstain at any time from the execution of any work that is required.

The responsibility of maintaining a record of sanctioned works, provincial and district, ready for execution, including works suited for famine relief, should rest with the chief engineer.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—If the designs and estimates of a certain number of projects, suitable for famine relief, were drawn up in full detail and recorded in the local chief engineer's office, their alignment and the commencement of work upon them, could be very speedily arranged. The work afforded by such projects and

by the regular budgetted public works outlay, would, in most cases, provide sufficiently for the earlier demands for relief, and give the local government time to mature such additional schemes as might appear necessary for meeting further requirements. The responsibility for maintaining such projects in an efficient state should rest with the Local Government.

Mr. Plowden.—Here it is assumed that there is a list of suitable projects ready for early execution, which are either suspended because they have been interrupted by good seasons, when the necessity for continuing such works had disappeared, or have not been as yet commenced. It is asked who should be responsible for maintaining such schemes in an efficient state, and how can such responsibility be enforced? This assumption rests on a possible necessity for the employment of labour, *i.e.*, unskilled labour on a very large scale and in an exceptional manner, and on this necessity recurring at long intervals of time.

I cannot comprehend such a position as is here assumed, if it is meant that the works to be included in these schemes may comprise projects not to be completed when once set in hand. If it is advisable to employ labour on any definite work the money so expended will have been, for a time at all events, expended without any return so long as the work on which it is spent is incomplete. But if it is so far completed as to give any return, then it does not come into the category of works to which I understand this question to relate, *i.e.*, works suspended before they have been so far carried forward as to be of use. I omit at present from consideration works projected but not commenced.

If I am not correctly apprehending this question, and it is intended to refer to works which have been begun and suspended, but have been so far completed as to be of use, so far as they go, though by extension they can be made of further utility, or to works which have not been commenced before, though projected and completely planned and estimated for them, it seems to me the answer is simple. The question consists of three parts :—

1st. How will it be best practicable to arrange for suitable projects.

2nd. Who is to be responsible for maintaining such schemes.

3rd. How can this responsibility be enforced.

The reply to the first part of the question I take to be this :—

You must find a project which embraces a very large quantity of work requiring unskilled labour, *i.e.*, either excavation or earthwork ; this must either be a self-contained work, or may be one which, in so far as it goes, will be complete, but can be supplemented so as to be of equal or of greater value by extension or by branches in connection with it. You are thus restricted to roads, canals, railways, or tanks.

Wells, I think, may be put out of the question, as not the class of work which would enable us to employ a large amount of unskilled labour, or to exercise proper supervision, if unskilled labour in sufficient quantity could be employed.

The last class of works would be determined by the district authorities with the aid of the engineering assistance available in each district.

For the first,—roads,—I think the proposals should be inaugurated by the district authorities; but their proposals should be sifted by the divisional officers, revenue and engineering, so as to secure that isolated schemes are not admitted, while more continuous projects, which would benefit a larger area by improving through communication, were lost sight of.

The same remarks would apply to canal projects. But they must be inaugurated by the canal officers and district officers, acting in concert, and would have to be sifted eventually by the head-quarter office of the Irrigation Department, so as to determine in what order, with due advertence to their utility and economy, the schemes might be admitted.

Railways would have to be treated in the same way as canals.

2. The next question, "Who is to be responsible for maintaining such schemes?" this is to a great extent disposed of by considering who are the persons who have to arrange for these projects.

I should make (*a*), the district officer responsible for maintaining the schemes for tanks; (*b*), the divisional office for maintaining the projects for roads; (*c*), the superintending engineer's office for maintaining the schemes for railways and canals.

The responsibility in each case being enforced by a memo. to be delivered by the out-going officer to his successor, a report going up at the time of transfer of office, which would show to the officer immediately superior whether this responsibility was maintained.

Mr. Edwards.—Railway projects will be the most suitable. If the surveys of the proposed lines are duly prepared, and deposited in either Commissioner's or Collector's offices, the work can be commenced at once, and on a regular system, immediately the necessity arises. Petty works, such as are called for at the beginning of distress, *e.g.*, raising and embanking roads, filling up tanks, and such like, need not be specially arranged for beforehand with a view to relief. Numerous petty schemes are prepared and entered in each year's budget but delayed for want of funds ; these can be started, and will afford sufficient employment until it is found necessary to open larger works, such as railway extensions.

BENGAL.

BENGAL.

Colonel Cadell.—The best way of arranging to have suitable projects ready for early execution would be to insist on the preparation in each district of projects in advance of what could be undertaken with the funds available for each year.

Since the development of the Road Cess system such projects would be prepared principally by the district engineers, and Commissioners should be responsible that the schemes be kept up by the district committees in communication with the Secretary, Public Works Department.

MADRAS.

MADRAS.

Colonel Mullins.— Maintenance of Schemes in readiness.—It will not be altogether easy to keep projects in complete readiness for execution when famine-relief operations become necessary, but once properly worked out it is not probable that material modifications would have to be made, and any severe drought necessitating the employment of labour on a very large scale is sure to give ample warning and time for preparation.

Ch. IV. Qn. 5.

Madras.

Major Montgomerie. — The Chief Engineer for Irrigation and his staff must alone be held responsible for the preparation and maintenance in an efficient state of all schemes of irrigation, whether they are to be carried out in the ordinary manner, when funds are available, or postponed to a more convenient season; complete copies of all schemes should, however, be maintained in the offices of the superintending and divisional engineers concerned.

Colonel Foord. — Question 5 has already been answered. It has been recommended that registers of useful works should be kept in the offices of the district engineers and superintending engineers, that the plans, estimates, and specifications of these works should, from time to time, be examined and, if necessary, revised. Works that have been carried out in whole or in part should be wholly or partially removed from the registers, which will then contain only those works that should be carried out when the necessity arises and funds are available. The responsibility of seeing that these registers are kept up should rest with the chief engineer.

Majors Mead, Pennycuick, and Capt. Awdry.— This question will settle itself when the schemes are prepared; in general the responsibility will rest with the executive engineers of divisions under the control of their departmental superiors. The question is one of administrative detail, involving no difficulty whatever.

Lieut.-Colonel Prendergast. — Works on a very large scale require special arrangements for the preparation of plans and estimates. In many districts at present nothing on an extensive scale is contemplated, and nothing will be ready on the occurrence of severe drought. District officers are unable to provide the extra establishment required for the surveys and estimates. Special officers will be needed with a subordinate staff, and as this involves additional cost under establishment, sanction must come from the highest quarter, that is, from the Government of India.

Mr. Traill.—If the estimates for any large work, and also the plans, have been prepared, the work could be commenced at a day's notice. It would be necessary to suspend entirely all ordinary works, so as to set the existing establishment free for purposes of supervision, &c.

The experience of the last famine showed clearly that there is a far too small proportion of upper subordinates (overseers and supervisors) available for any special work.

The responsibility should rest upon the divisional officer of maintaining schemes in a fit state to commence work upon them at a moment's notice; but, as before stated, this division is not suitable for the projection of any large scheme, and, as small works would have to be substituted, the necessity of having extra establishment of the upper subordinate class available becomes more apparent.

Ch IV. Qn. 6.

Question 6.—Their Relation to Numbers requiring Relief.

What number of persons is likely to be thrown on relief-works in an extreme case, and how should such a scheme be framed as to indicate what portions of it should be taken up on any particular occasion in order to provide for the employment of the anticipated numbers and for the length of time required?

SUMMARY.

The result of the answers appears to be briefly that, given a scheme of works and a knowledge of the numbers they would give occupation to, it would not be difficult to commence them in the sequence of their importance.

Punjab.

PUNJAB.

General Maclagan.—The number of persons likely to be thrown on relief-works in an extreme case it would not be easy to estimate. The number is augmented by people from adjoining native states, when these states have suffered equally with the British districts, or much more, as in some cases. In the famine of 1868, and at other times, people of Bíkáner have come in considerable numbers to the Punjab in search of work and subsistence. In the present year certain works in the northern districts of this province were carried on chiefly for the benefit of people from Kashmír.

In 1868–69, which was a time of great but not extreme pressure, in the districts south of the Sutlej especially, the number of persons employed on works was 1,060,059,* and of infirm persons relieved gratuitously 2,435,404;* the number of people who received gratuitous relief in the three districts of the Hissar division was 1,383,636.* The largest number of persons employed on works in any district was 643,402* in Rohtak, and of the infirm 792,194 in Karnál, the number of women in each of these cases exceeding the number of men. With an early supply of easily accessible work the proportion of people in employment would be higher.

In the famine of 1860–61, which was also chiefly in the country between the Sutlej and the Jumna, the amount expended on—

Relief-works was - -	Rs. 3,25,106
Takávi advances - -	„ 2,75,000
Gratuitous relief - -	„ 7,83,945

The number of persons employed on works is not recorded. The number of persons fed daily amounted in July 1861 to 116,000. In the Delhi division the aggregate number of persons employed and gratuitously relieved, during the whole time of the pressure, was 40,176,190.* Works were not systematically undertaken at that time, and many had to be devised for the occasion.

* Lieutenant-General Maclagan permits me to note that these figures give, not the number of the persons relieved, but the sum of the numbers relieved daily during the whole period of relief operation. For further information on the subject, see the reply to Question 2, Chapter I.—E. Wace.

NORTH-WESTERN PROVINCES.

Mr. Plowden.—It is impossible to say what is the outside number of persons that might in times of the most severe famine be thrown on relief-works. But every scheme should indicate the amount of unskilled labour which it is capable of giving work to. With this information and with each scheme numbered in the order of its utility (and I think it is essential they should be so numbered), there would be no difficulty in arranging for the employment of the number that might be proved to require employment for the length of time such requirement might last.

Mr. Colvin.—60 or 70,000. I cannot answer the last part.

BOMBAY.

Colonel Anderson.—The numbers requiring to be provided for in the late famine * may be taken as the maximum number requiring to be provided for in the future. In any scheme the most immediately useful part of it could be indicated without difficulty, and finally decided on in the month or so which must always intervene between incipient scarcity and actual famine.

Mr. Propert.—It is difficult to estimate the number of persons likely to seek relief in an extreme case. The population of the Kaladgi collectorate is about 816,037. Kaladgi was more heavily afflicted than any other Bombay district, and I find that the greatest number of persons on relief-work at one time was 123,277, or about one-seventh of the population. This would give a total of about 143,000 persons for Khandesh, where the population is about 1,000,000, supposing the province to have reached the condition of Kaladgi; although had rain not arrived late last season, judging from the condition into which the country was falling, I should not have been surprised at seeing 200,000 persons seeking relief. Circumstances, however, might alter these numbers very materially; for instance, if an extreme famine were to arise after two or three years of scarcity, so many people in all probability would be unable to withstand the visitation that we might be called upon to assist at least a quarter of the entire population. In such matters, however, it is difficult to form an estimate of any value.

If road or tank schemes be carefully prepared and sanctioned beforehand, there would, I think, be no difficulty in selecting portions to be taken in hand according to the severity of the scarcity or famine.

* From 8 to 23 per cent. of the population of a district.

MADRAS.

Mr. Sullivan.—In Kurnool, Bellary, and Cuddapah, the three districts where the effects of the famine were most severely felt, it happened that on the 6th January 1877 the largest number of labourers assembled on relief-works in all three districts. On that day there were in—

Kurnool	- -	323,338=33·69
Bellary	- -	398,961=23·91
Cuddapah	- -	201,061=14·88

per cent. of the population. These figures are exclusive of the numbers who were in receipt of gratuitous relief, and taking them as a guide it may be assumed that in an extreme case it would be necessary to provide work for not less than one quarter of the population.

Distress of a nature so severe as to require measures of State relief is not likely to be confined to the limits of a single district, but will probably embrace the whole tract lying within the same climatic influence. In framing a scheme of works to afford employment to such vast numbers as would, under these circumstances, stand in need of it, the following conditions should be kept in view:—

(1.) The selection, as far as possible, of such works as would afford uninterrupted employment for the whole period of distress;

(2.) The disposition of works so as to bring them within moderately easy reach of the famine-stricken population; and

(3.) Concentration of labour in view to economising supervision.

In dealing with large bodies of labourers, time must elapse before organisation and discipline can be introduced; but if they are employed as much as possible under the same officers, on the same description of work, and under a uniform system, comparative order and regularity take the place of the indiscipline and confusion which must prevail when the conditions above indicated are absent. Lines of railway and tramways connecting large towns and trading centres with each other and with the coast, and canals for navigation or irrigation, or both, suggest themselves as works to which prominence should be given in a scheme having for its object the employment of famine labour, as they would traverse a considerable length of the tract affected, would be moderately accessible to a large number, could be easily supervised, and, if ready planned beforehand, any portion could be staked out and commenced on immediately the necessity for work arose. Surveys, levels, and estimates for such projects should always be in readiness, and the difference between the actual expenditure and the estimate would give approximately the nominal loss to the State caused by the employment of famine labour. The expression *nominal* loss is used advisedly, because, of course, the preservation of life and the means afforded to the able-bodied population of tiding over a disaster which would otherwise sweep them away, must, in the long run, operate beneficially for the common weal, no matter at what price the object is attained; and if the works are opened in time, if the helping hand is held out to the people before their physical powers are half exhausted, and, above all, if whilst employed by the State they receive a wage sufficient to provide the sustenance necessary for a labouring man, such difference would be reduced to an almost inappreciable point, and would, in reality, represent little more than the enhancement of wages rendered necessary by the famine prices of articles of food.

Although projects such as are indicated above should form as it were the back-bone of a system of relief-works, it would not generally be possible to have more than one or two such in each district; and as the districts in the Madras Presidency embrace an area varying from 1,000 to 11,000 square miles, it is evident that they would be difficult of access to many residing in remote localities. It would, moreover, be unadvisable, on sanitary and other grounds, to concentrate the vast amount of labour available in seasons of scarcity in one or two spots, and the scheme should, therefore, provide for employment being given in other parts of the district. In view to this, each district should be divided into circles of a size to admit

of thorough supervision on the part of both the professional department and the relief officers entrusted with the payment of the labourers.

The works which suggest themselves are—

(1.) All works not requiring skilled labour for which provision has been made in the year's budget;

(2.) Works of a similar description which have been sanctioned, but the execution of which has been deferred for want of funds;

(3.) Works which have been professionally investigated, but for which estimates have not been submitted for sanction;

(4.) Works, the execution of which, except under famine pressure, it might be a doubtful policy, financially considered, to undertake, *e.g.*, clearing silt from the beds of large irrigation tanks.

To combat a famine successfully, however, a good deal more is required than having ready to hand a scheme of works, although this is, no doubt, an essential preliminary. To do battle with an agency of nature which, though apparently no bigger than a man's hand at its inception, gathers force as it moves along its destructive path, the whole plan of the campaign must be carefully laid down beforehand, the general appointed, and the forces marshalled. There must be preparedness at all points to meet an emergency calculated to tax the resources of the State and the energies of its officers in an unusual manner. In laying down a plan of operations, then, the following points should be kept in view:—

(1.) The recognition of the abnormal character of the situation;

(2.) The consequent necessity for modifying the usual system of administration;

(3.) A distinct understanding that the primary object of State interference is to *save life*, and that financial considerations are *not* to be allowed to defeat that object.

The partial break-down in the scheme of relief operations in the early part of the famine was undoubtedly attributable to the exact position of affairs not having been fully apprehended at that time. An extraordinary emergency had arisen, and an effort was made to cope with it with means and appliances which perhaps met every-day requirements fairly enough, but which were utterly insufficient to resist the abnormal strain which was brought to bear on them as the distress amongst the people spread and intensified. For some months after it was an admitted fact that the famine was sore in the land, not a single addition was made to either the European or Native agency in the Revenue and Public Works Departments; correspondence was carried on in the usual circuitous manner required by official routine; and had it not been that most of the local officers, realising the dangers of delay, took it upon themselves to break through this impediment to action, the results would have been yet more disastrous than they were. The cautious manner in which public business is very properly carried on in ordinary times must be abandoned where everything depends on promptitude of action. Projects intended to furnish employment and food to starving multitudes cannot wait to be filtered through two or three departments, but must be started at once. At the same time, it would be an unwise policy to withdraw relief operations from all control, and allow them to be carried on in accordance with the idiosyncrasies of each individual officer; this would result in the wildest confusion, reckless expenditure in one district and injurious parsimony in another, and spasmodic efforts would take the place of an organised system. There must be a controlling head,—one to be carefully selected, but in whom, when once installed, plenary authority should vest. As Famine Dictator, his word should be law to his local lieutenants scattered over the country, and to accomplish his task successfully he must have the fullest support of the Government. His powers as to expenditure should be unlimited. He must determine which of the matured projects should be undertaken, and what new ones should be investigated in view to providing for future requirements. It will rest with him to decide the additions necessary to be made to the local staff, the distribution of the officers, and the system on which work is to be conducted. The fullest discretion should be left to him as to what districts should be brought under State relief, and from which such aid should be withdrawn; and in all matters of administrative detail he should, of course, be supreme. He must, in brief, as the plenipotentiary of Government, wield that authority which, as a collective body, they are unable to exercise with the promptitude which the emergency of a widespread distress demands. Allusion has not been made to the powers of the Dictator in regulating the rates of labour wage and gratuitous relief, as, after the dire consequences resulting from the crude experiments which were allowed to have a place in the system of relief in the early part of the recent famine, it is presumed that this most important question will be determined, on scientific principles, in a manner that will utterly preclude similar disasters in the event of another emergency arising.

The local officers in charge of relief operations would be the collectors and engineers of districts, and their subordinates, with such additions to the strength of the latter as might from time to time seem necessary. The experience gained in the recent famine indicates the expediency of relieving the engineering staff of all but strictly professional work. To make them paymasters of labour, and administrators of the details of famine relief, is to assign them duties which can be just as well performed by less skilled agency, and which take them away from work which can be satisfactorily executed by scientifically trained men only. The officers of the department feel this. They chafe against a system under which their professional acquirements are not utilised to the fullest extent; and it can hardly be wondered at if the alien duties thrust upon them are more or less perfunctorily performed. It is not in the nature of things that a good engineer, who prides himself on the quality of his work, should make a good relief officer. The habit is strong in the former to pay only by results, and those of famine labour hardly come up to the standard of professional excellence. The number of engineers, moreover, in this country is limited; and even in ordinary times their services are actively in demand for scientific work. To another agency, therefore, should be assigned the details of relief administration; and this part of the question is not altogether free from difficulties. In no country in the world, perhaps, does there exist, ready to hand, an organisation better adapted to deal with the masses than is to be found in the local institutions of the Madras Presidency. The village, the taluk, and the district are all links in the chain which connects the humblest ryot and the meanest artisan with the Government; each is in itself an organised system of government, and each is dependent on the other. But admirable though the system may be in theory, it is, so far as the object under notice is concerned, practically valueless in consequence of the gross and incurable corruption of the subordinate agency. Nor, unfortunately, is this confined to the lowest class of officials; in a more or less degree it pervades all ranks of the native establishments, from the village monegar to the tahsildar of the taluk. There are, of course, individual exceptions, but they are few and far between, and, having such odds to contend against, are impotent to check the progress of this widespread Oriental vice. That, then, which under other conditions would be a most valuable instrument in the hands of the State is, in reality, a source of weakness and danger, inasmuch as it represents a powerful organisation, through whose means alone the masses can be reached, but whose object is to divert as much of the stream of benevolence as possible into their own pockets. To this tribe of vultures a time of famine means a time of

plenteousness and good living. To use a native expression, they take with both hands—they cheat the Government who pay them, and they take toll from the famishing wretches whose misery they are employed to alleviate. Their agency cannot be dispensed with, and therefore it becomes necessary to keep them under strict European supervision, by which, to a certain extent, their knaveries and peculations are restricted; and it is this unfortunate necessity which enhances the cost of relief to an incredible extent, for, to be of any practical use, the European staff must be of sufficient strength to admit of a supervising officer visiting every relief work and camp at frequent intervals. And even then, the difficulty will be only half overcome. The people are so accustomed to be fleeced by their compatriots in office in ordinary times, that the levy of a contribution on their famine pittance appears to them almost as a matter of course. The English relief officer may himself see the famine dole placed in the hands of the proper recipients, but his back is hardly turned before some harpy or other has made it pay toll; and, on the other hand, funds placed in the hands of native officials for the purposes of relief will, in 50 per cent. of the cases, be surely misappropriated; and detection is next to impossible. Nominal rolls of the recipients and vouchers, prepared in the most business-like manner, will be submitted to the supervising officer, who, whatever may be his suspicions, has no alternative but to accept them. It is clear, then, that the European supervising agency must be kept up to a strong point of efficiency; but whence are the members of the staff to be drawn? In the recent famine, the numerical deficiency was supplied, partly by volunteers in the Presidency not in the service of Government, and partly by officers belonging to other presidencies, whose services were temporarily placed at the disposal of the Government of Madras. In regard to these last, most of whom were drawn from the army, there is no question but that they were placed in a very difficult position. New to this part of the country, and ignorant of the language, habits, and institutions of the natives of Southern India, they suddenly found themselve saddled with heavy responsibilities of an entirely novel character. Entrusted with the disbursement of large sums of public money, it devolved upon them to see, not only that a fair return was made in the shape of labour, but also that the State relief reached every individual of the masses who thronged daily to the works and camps. They had to hear complaints and give redress; to determine who should work and who should be fed gratuitously; to lay out camps; to provide for sanitation; and, in short, to carry out with care and exactitude all the details of relief administration. Not knowing the language, there could be no direct communication between them and the people; and it is hardly to be wondered at that the situation was clearly turned to account by the unreliable and rapacious subordinate agency who intervened. Men who had long resided in the Presidency, and who had an intimate knowledge of the people and their language, found it a difficult task to hold their own, and therefore it is no disparagement to these officers, who honestly tried to do their duty under great difficulties, to say that their administration of famine relief in Madras was not so successful as it might have been, had the work been assigned to officers belonging to the Presidency. As a matter of fact, the Madras Army was hardly at all indented on for aid during the late emergency; and, considering the number of unemployed field officers available, it remains to be explained why their services were not called into requisition in preference to seeking assistance from other Presidencies.

Lieutenant-Colonel Mullins.—It does not appear to be practicable to give any answer that would be of practical value to the first part of this question. The actual numbers receiving relief in one form or other in each district during the famine of 1876–8 is known; but there has been so much famine during the preceding quarter of a century, and scarcity and distress have usually affected only comparatively small areas at any one time. Besides, it depends very much upon the system followed, whether a small or large proportion of the distressed population will come upon relief-works. It is not necessary that, even in such a severe crisis as that of the hot weather of 1877, relief-works should be so utterly swamped by numbers as was the case in Bellary and Kurnool. No one can, it is thought, forecast both the numbers and the duration of time of such numbers. With regard to the latter part of the question, it must be noted that most projects admit of a natural sequence of work, and also of the execution of any required quantity of it, so that any part up to the completion of all the work of descriptions suited to unskilled labourers could be taken up. In the case of large canal schemes, the work should be carried out on a small scale from end to end of one or more sections in the first instance, and then enlarged should continued employment for labour be found requisite.

Major Montgomerie.—During seasons of extreme famine nearly the entire agricultural and labouring classes are certain to be thrown on the hands of Government in the first instance, and afterwards a great proportion of the remaining population. Their numbers will, of course, depend on the duration and severity of the famine. To find employment for the first-named class on useful irrigation works in the ordinary manner, there would be no difficulty whatever, provided schemes for such works in convenient localities are in readiness; due notice being given before the commencement of the work, and the executive establishment strengthened in proportion to the extra grants made. By the Madras Famine Order, No. 2847, dated 24th September 1877, this important class, equally with the rest of the population, were prohibited from employment on the works until it was certified that they had become indigent, destitute, and capable only of a modicum of labour; and then only were they permitted to earn a more subsistence allowance, although they were able and willing to execute any quantity of ordinary unskilled* work, if paid for their extra labour. In fact, they were only permitted to perform a moderate task at a high rate, instead of a greater quantity of work at a much lower rate. The hardship of this arrangement was principally felt by the wudders and other labourers who usually execute work by the piece, not only for Government, but for the land-owners. They are accustomed to work hard, and require more sustenance than the ordinary native of a town. Of the second-named class of the population, the professional beggars and mendicants are totally unfit (morally or physically) to perform any work whatever. They should either be kept in closed camps, or deported from the locality. The shop-keepers, weavers, and higher castes generally, are very little better at manual labour than the mendicants. They leave their homes with the greatest reluctance; and if they are to be employed on irrigation works, special rules for working them should be laid down. The lower castes, on the other hand, although not usually given to hard work, would soon become proficient, and quite able to compete with the ordinary labourers. Some of the best gangs of workmen between Rajahmundry and Madras are composed of horse-keepers and others who were recruited 15 or 16 years ago in Bungalore and other large towns for the Upper Godavari works.

Mr. Price.—This question is a very difficult one to which to give a reply of any value. The largest number of persons on works in this district during the famine, on one day,† was 32,349. Supposing that the whole of these belonged to Chingleput, which it is known was not the case, although it cannot be stated

* Earth-work, stone-quarrying, collection of metal, &c.

† 1st September 1877.

what proportion belonged to other districts, the percentage on the population would be 3·44. But there is another question to be considered before deciding what proportion of the people could, in an extreme case, be expected to come upon works; which is, what number of the individuals who were employed upon them during the month that numbers were the highest, would have, had a sufficiently large supervising staff been available, been eliminated as being persons not absolutely requiring relief. What it was here it is impossible for an officer not personally acquainted with the state of affairs to determine. In any case, a rough estimate only could be made. Judging from my experience and observation in the Cuddapah district, where I inspected many thousands of coolies, I should say that about 25 per cent. of the people on works could have been turned off if there had been sufficient officers of the superior grade to look closely into the circumstances of each individual in the gangs. The enforcing of the "distance test" showed how many who were not in absolute necessity got on to the works.

Allowing that the same was the case in this district, the largest number that ought to have been on the works was 24,262, or 2·58 per cent. of the population. We could hardly have a worse famine than that which has now nearly passed, and the highest figure of persons on works, less the deduction made, can be fairly assumed to represent an "extreme case." I have already indicated in my replies to another portion of the questions asked by the Famine Commission, my ideas as to the system to be followed in affording relief by giving works in times of distress. This involves the drawing up beforehand of a scheme of works for each district; and, as I know nothing of those which would be or ought to be made available for famine relief, I can give no scheme such as that mentioned. To make any calculation, it must be known beforehand what works can be made available. These, and the amount of employment which each will afford, being ascertained, the number of persons who can be taken on each, and the number of days for which they can be employed, can be easily fixed.

The average increment, either per week or per month, of persons requiring work can be calculated with moderate accuracy, and it can then be decided what works it will be necessary to take in hand at any particular period. The famine, it is true, has shown that increases and decreases upon works took place suddenly and sharply; but I am very much inclined to think that had everything been cut and dried beforehand, had a sufficient staff been at once available, and had distress been everywhere taken in time, this would not have occurred. It was the want of proper works, of tools and supervision, the injudicious leniency of some officers, and the equally injudicious harshness of others, that, to my mind, mainly caused the enormous fluctuations in numbers upon the works which from time to time took place during the famine.

Mr. Turner.—I do not think it is possible to frame a scheme which could be adapted to all districts alike. To frame such a scheme for any district would require the closest knowledge of the various peoples and tribes living in that district, and an intimate acquaintance with their habits under somewhat analogous circumstances. The people will have the same tendency to follow a certain given course in times of famine as in times of ordinary scarcity, only in times of famine the tendency is immensely exaggerated. For instance, take the Madura district during the late famine; the distress was of course most severely felt among the village hangers on, such as pariahs, chucklers, &c., and among the agricultural population of the uplands, where the crops always yield but a poor return, and where consequently the *mass of* people are always on the margin of starvation. In times of distress the able-bodied of the first class will go away in search of work either in their own district or elsewhere according as they have been accustomed to obtain labour near at hand or by emigration. The same will occur among the agricultural population. The able-bodied men will set out to that part of the country to which they have been accustomed to resort in ordinary years of scarcity. As the scarcity progresses another and again another wave will set off in the *same direction*. In this way during the late famine I met crowds of people on the wander to "Nagore,"* "Colombo," and "Periyakulam." You cannot stop these people by saying, "You won't get work where you are going, the place is overstocked; stay and work here." It is a fact that crowds of coolies used to pass the works in the Ramnad zemindari on their way northwards, and nothing would induce them to stop and work on the Ramnad works. But there are a very considerable number of people in the Madura district who never do work to any useful purpose. These are, for the most part, the refuse of the village servants and a considerable class of people who gain a precarious existence by a little agriculture, a little shikar, and a great deal of thieving. To this class belong the Kullans,† and the effects of famine on this class were very noticeable in the immense increase of cattle-lifting and crime generally. Neither of these two classes will do a bit of work, unless, perhaps, it be to their own village tank. The first class filled our roads and relief camps with famine subjects, and the second filled our jails. Deducting these two classes, deducting also the able-bodied who have emigrated in search of labour, and deducting a rather large class in Madura district always above the reach of famine, it follows that there are very few left in the district who can or will work, and *almost none* who can or will leave their villages for work at a distance. Those left in the most famine-stricken parts of the district are, therefore, chiefly women and children. The few able-bodied men left behind are those whose services cannot be dispensed with unless the whole village system is to be ruined. These are retained by the rich men of the village for sinking wells, &c., and in addition almost every house will, except in the most extreme famine, retain one adult male to look after the cattle and house. Of course, these cannot leave their villages; if they do, everything will be stolen. I knew that the greatest distress was felt by this class, and they are the most difficult to relieve. They cannot go to works at a distance or camps; at least, if they do, they and their family must be ruined, and rather than betray their trust they will often die of want. I think, therefore, it will appear clear that in a district like Madura, where extensive emigration in search of work is the *custom*, you want very few *large works for able-bodied* labourers. If you have such works I doubt whether you would get much more labour for them in a famine season than in any other.

As a precaution, however, a few such works should be kept ready in case of accidents. In the first and second stages of a famine, therefore, a district like Madura will want very few famine-works, but in the third stage you will want light work for vast numbers of women and children; I cannot say for how many, but I dare say for one-sixth, of the women and children of the lower-class population. In addition to the above you would want work for a large number of weavers who do not emigrate; work, however, is best given to this class in the shape of advances to enable them to follow their own trade.

Mr. Wilkinson.—In May 1877, when the famine was at its height, the number of persons employed on relief works under civil officers in the sub-division of Salem was about 20,000 per diem. I believe a number of

* Tanjore district.

† I mean the Kullans proper, not the Maravars or other tribes who are sometimes classified with them. I believe many Kullans emigrate, and, in that case, I am told work well.

persons were also employed under the Department Public Works, but information on this point was difficult of attainment. Allowing 4,000 to have been employed by that department, which is, I feel sure, above the actual number, we may assume that the total number of persons thrown on relief works during the height of the famine was about 24,000. The population of the sub-division as per the census of 1871 was 546,000, so that during the worst part of the famine a little over 4 per cent. of the population were on relief works. The number of persons in receipt of gratuitous relief during the same month was about 30,000.

Mr. McWatters.—The answer to this question will depend on the system under which the relief-works are conducted. It is to be assumed that the State is responsible for offering the means of support to all persons not able to provide for their own maintenance, subject to such tests as will prevent relief being given to persons not really in want, and will protect the public finances as much as possible. The tests indicated are the distance, wages, and labour tests, and there may be others. In calculating the numbers likely to be thrown on works in an extreme case, it seems to me that the "distance test" is the most potent factor. The experience of the recent famine shows clearly and distinctly that a large class of cultivators and labourers will not leave their homes for distant works. They will travel five or six miles to a work, and return to their houses at night; but further than this they will not go. They draw the line at abandoning their houses. The result of this is that, if a sufficient number of relief-works is opened in each taluk, so as to allow the agricultural poor to repair every evening to their homes, the number likely to come on the works would be very considerable; and, on the contrary, if there are to be a few works only, so that they would have to abandon their houses altogether and live away from their villages, the number likely to avail themselves of work on such conditions would be small indeed, and would consist of local coolies or those residing near the works, and a few strangers from distant parts. It is thus a grave question for Government to decide whether or not this prejudice, or whatever else it may be called, of the poorest class of agriculturists and labourers, should or should not be humoured. They suffer, under their peculiar circumstances, most intensely from famine. It is well know that nearly half of the puttadars or Government tenants pay Rupees 10, and under, as yearly rent to Government. This means in a good year a bare subsistence for a cultivator and his family, in a middling year great stint, and in a bad year poverty and distress. They persistently refuse to leave their houses for works at a greater distance than five or six miles; they cling to their villages until actually driven desperate, and then they seek gratuitous relief in conjee-houses or camps. But by this time their state is almost hopeless. They die on our hands in hundreds. This happened in 1877. Works were comparatively few, and only those within a radius of five miles or so came to them. But, besides being comparatively few, they were of short duration at any one place, and thus relief was given to different sets of people at different times according as old works closed and new works opened, or according as, in the case of roads, the works progressed to a considerable distance. I think also that gratuitous relief was commenced far too late. The famine was ahead of us all the time, and we could never overtake it. Owing to these causes we had over 8,000 people, in a more or less emaciated state, within the limits of the Erode town in August 1877. I have preserved the caste classification of this number, and will enter it for information :—

Caste.	Number on the 9th August 1877.	
	In the Erode Relief-House.	In the Pachiparai Camp at Erode.
1. Vellalars	547	945
2. Vetti:vars	268	534
3. Vadugars	125	225
4. Tottiars	35	26
5. Kaikolars	470	520
6. Mussalmans	50	125
7. Valayers	55	35
8. Oddars	140	436
9. Barbers	25	64
10. Kammalars and Carpenters	55	225
11. Pariars	566	700
12. Chucklers	530	655
13. Pallars	10	120
14. Shánárs	136	314
15. Kuravers	44	60
16. Christians	40	52
	3,096	5,056

I think that nothing could be more instructive.

The first three castes are owners of land themselves, or labourers attached to owners of land. No. 4, or tottiars, are carriers of firewood. No. 5, or kaikolars, are weavers. The distress amongst this class was particularly severe, so also amongst No. 8, or the oddars, who are usually the best workers. They refused daily wages and desired piece-work. Among the pariars and chucklers a great many are generally attached to landholders. Both these classes are very difficult to deal with. The majority of these, especially of the chucklers, are as obstinate about quitting their villages as the owners of land are. When the order of the 24th September 1877 was enforced, and closed camps took the place of open conjee-houses, and those selected from the conjee-houses were told off to works, only a few actually went to works, and a great many who went only stayed a few days. A wandering hither and thither thereupon commenced, and ended in the closed camps and hospitals being continually supplied. When the Erode taluk was at its worst I calculated from personal observation that 10 per cent. of the population were receiving State aid of one kind or another. I think that, if works were sufficiently numerous and commenced opportunely, this number, at the least, would be thrown on relief-works in an extreme case. The number for the district with its one-and-three-quarter millions of population would be 175,000.

If works are so sparse as to entail abandonment of homes, the number would not exceed 50,000.

The largest number receiving relief at any one time in the recent famine was over 240,000.

Two hundred and fourteen thousand were receiving gratuitous relief, and only about 26,800 were on works.

Forty-five thousand were on works under the working of the order of the 24th September 1877, while at the same time there were over 12,000 receiving gratuitous relief.

The works, however, were comparatively few, and afford no clue as to what the number of people would be if the works were sufficiently numerous to virtually oust the distance test. The number of puttahs in the Coimbatore district was 233,183 in Fasli 1284. I have calculated that there are on an average 2½ puttahdars to a puttah, but I will take only two. The total number of puttahdars would be 466,000. Half of these, or over 200,000, pay 10 Rupees kist and under to Government.

I merely mention this to show at a glance that my estimate of 175,000 is far from overdrawn.

My ideas now about relief are something of this sort :—

I think that the distance test should, as far as possible, be abandoned. Works, so far as it is practicable, should be opened at an early stage of the famine, and be so sufficiently numerous * as to enable all seeking this kind of relief to return of an evening to their homes. This would provide for all the able-bodied.

The wages ought to be somewhat under normal rates,† and constantly regulated by the ruling prices. The tasks should be the normal asks of the district. Piece-work might be given to oddars. The advantage or disadvantage of piece-work depends on the nature of the task set. If the task is severe, piece-work will be so far disadvantageous, and probably not much undertaken.

Personal appearance should be more looked to than it is in judging of fitness for relief, at all events to the extent of at least suggesting local inquiries. The people most worth protecting in a famine are the cultivators and their able-bodied labourers, and under the above scheme the Government would have no necessity for looking after the old, the infirm, and children of this class.‡

In regard to gratuitous relief I think that the best way would be this gratuitous relief should be started early, at least at the same time as works.

For this purpose villages should be grouped in circles or parishes according to their size.

A closed camp, having regard to caste distinctions, should be erected at a central place in each circle, and all unable to work at the beginning of a famine from whatever cause should be allowed admittance. Those who do not accept one or other of these systems of relief should be left to themselves. With regard to the nature of gratuitous relief I think it should be given by tickets and in the form of raw grain with vegetables and condiments in ordinary years, and, if necessary, in a time of famine, as cooked food or bread. There will be no difficulty in establishing a camp bazaar for the purpose.

I hazard the above suggestions in regard to gratuitous relief because I think this country is drifting into a state when an organised poor law will become necessary, and because I think it would be easier to work a famine if we have existing circle or parish poor-houses.

There is a way open now for making a beginning. It is contemplated to attach and reappropriate all the temple endowments which have been so shamefully embezzled since Government abandoned the management of the temples to local committees and trustees. A portion of the endowments should be devoted to only what is absolutely necessary for the temple worship; judging from all that is appropriated to that purpose now, a very small sum indeed would be found sufficient; a second portion might be devoted to education, and the remainder to the erection of circle poor-houses.

During ordinary years each circle should be made to provide for its own poor, and in times of famine the Imperial Government should come to its assistance. The management of each poor-house might ordinarily be entrusted to guardians nominated by the circle, the institutions being under the general supervision of the collector.

Mr. O'Shaughnessy.—The famine of 1876, 1877, and 1878 in certain districts of this Presidency is as extreme a case as need perhaps be considered. The greatest number of people, exclusive of immigrants, on relief-works in this district at one time in this famine was 79,168, or about 5½ per cent. of the population. The greatest number receiving relief of *all* kinds was 224,735, or 16 per cent. of the population.

The second part of this question is too large to be answered in this hurried report.

Majors Mead and Pennycuick and Captain Awdry.—It may be considered highly improbable that any future famine will greatly exceed in severity that which has just passed, and during this the maximum numbers on the works were 70,000 in Salem and 44,000 in Coimbatore. It is probable that these numbers might have been increased if greater care had been exercised in the distribution of gratuitous relief, but it is impossible to offer a trustworthy opinion upon this point. It is not thought possible to settle beforehand the order or extent to which relief-works should be taken up; the question is one that must be settled when occasion arises.

Lieut.-Colonel Prendergast.—It may be anticipated that 10 per cent. of the population will be thrown upon relief-works. In the case of a work of magnitude, such as the Buckingham Canal, the estimate may be prepared in sections for certain lengths according to the cubical content and section of the work to be executed. A section of the estimate may then provide work for 10,000 people for six months, or 20,000 for three months; and according to the expected intensity and duration of the famine pressure one or more sections of the work will be put in hand.

Lieut.-Colonel. Hunter.—The number during the last famine is said to have averaged about 35 destitute people wanting relief from work to each square mile of area; the commencement of projects, supposing that a sufficient number are ready, should start from the taluks most affected.

Major Vibart.—The numbers thrown on the relief-works during the late famine may, I should think, be taken as the number likely to require work in an extreme case, as we are not likely to have famine in a worse form than from 1876–1878. The greatest number on relief-works in Trichinopoly was 14,521, and the greatest number relieved gratuitously was 7,843.

To enable the Government to ascertain what works they should select from the scheme, each work entered in the list should have placed opposite the number of men and women who would approximately be required to complete them.

Mr. Traill.—During the late famine, the numbers on relief-works rose to nearly 120,000 in the four taluks of this division, or about 33 to the square mile. A sufficient number of works should be fixed upon in each taluk, and two or three could then be commenced simultaneously in each,—giving the preference to the largest and most important.

---

* Or if this is found, in practice, impracticable, there might be one work for each circle of seven miles' radius, say, kept going on continuously throughout the famine period.—G. McW.

† *E.g.*—If in ordinary times a man's wages is three annas a-day, when the average price of cholum or ragi, or whatever the staple grain is, is say 12 measures the rupee, I would fix the famine wages at a little less than three annas, and increase it as the price of grain rises. If task work on roads, the principal kind of relief-work available in this district, could be properly exacted, which experience has proved is well nigh impossible, I would be liberal in the matter of wages; but there must be some check.—G. McW.

‡ It was notorious during the recent famine that many able-bodied persons who could have tided over the famine without State aid came upon the works when the works were near their homes—particularly relations of the village headmen. There is no way of eliminating these except by inspection and inquiry. —G. McW.

QUESTION 7.—SHOULD THEY INCLUDE WORKS OF DOUBTFUL FINANCIAL VALUE.

Should the works include only such as had been sanctioned for construction under the regular rules on such subjects, or would it under any circumstances be right to include in such a scheme large works to which sanction had not been given on account of their doubtful financial value, and their not being of a character that would justify their execution under ordinary circumstances? How far might there be risk of the Government being led into unprofitable expenditure in the completion of works of this sort begun under plea of famine pressure?

SUMMARY.

Authorities are divided on this question. Some would absolutely exclude all works of doubtful financial value. Those who would admit them are alive to the danger of wasteful expenditure, though in Bengal the chief engineer is of opinion that with proper care and foresight the risk would be small.

PUNJAB.

PUNJAB.

General Maclagan.—It would be right, under two conditions, to include among the means of furnishing employment in famine time large works which had been set aside on account of their doubtful financial value: (1) if the works are specially suited, from their nature and position, for providing employment of the kind required; and (2) if they are works likely, when completed, to be of great general or special usefulness.

In speaking of a work as of doubtful financial value, a work which should be of the remunerative class is implied. It is one from which after completion there is to be some income, but of which the anticipated income is too little to give a good return for the initial and current outlay on it. By this circumstance it would be reduced towards the condition of an unremunerative work, and would still be above works altogether unremunerative, like metalled roads, which are costly in first construction and maintenance and yield no return in money. A work of doubtful financial value should not, on that ground alone, be absolutely rejected. The Government cannot go on in an unlimited way constructing works which should be remunerative and are not. But famine demands should not be debarred from taking advantage of such works if they fulfil the two conditions above mentioned.

Works of the other kind noticed in this question, works which are not of a character that would justify their execution under ordinary circumstances, works which are not wanted, and would not be proposed except for the special purpose of providing the people with employment,—even such works it may be right to take in hand under the pressure of extreme distress. The execution of such works may be sometimes necessary, but, as they would only be taken up when no works of recognised utility remain available to which the people could be sent, they should not be deliberately included in a scheme of works proposed.

There is undoubtedly risk of Government being committed to further expenditure for the completion of such works commenced in famine time. But the course to be followed would depend on the circumstances of each case, and the expenditure need not be always unprofitable.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Mr. Sells.—I am of opinion that a scheme of relief-works cannot be restricted to works which promise to bear good fruits in a financial point of view. Utility should certainly always be looked to, and no absolutely profitless, or rather useless, work should find place in such a scheme; but there are many very useful works which may never bring a farthing into the exchequer. This is the case with the construction of a good many roads, which, however they may benefit the people resident in the district, can scarcely be expected to affect the State funds, even in the most indirect manner. Famine may be regarded as an abnormal state of things, and abnormal measures will always, it may be said, be required for its relief. As a rule, I should say that the most unprofitable works, in a pecuniary point of view, are likely to be best suited for the relief of a starving population. Very few paying works can be executed without a considerable expenditure of skilled labour, while those that suffer most from pressure of scarcity form the most unskilled portion of the aggregate population. It is possible, therefore, that Government may be led into expenditure financially unprofitable, but in such a case it seems questionable whether pecuniary gain is the main thing to be looked to. I should myself say, most decidedly, *it is not.*

Mr. Plowden.—I think if the system were adopted throughout of assigning to each project its position in order of utility and financial results, there would be no necessity for including in the series any works which had not been sanctioned for construction under the regular rules.

For instance, take the case that is put in the question, the advisability of undertaking as a relief-work a large project to which sanction had not been given on account of its doubtful financial value, and of its not being of a character that would justify its execution under ordinary circumstances.

This work would, in the system I have supposed, come the very last on the series of schemes kept up for famine-relief works, and would not therefore be undertaken till all others before it were in hand.

There would be no risk of Government being led into unprofitable expenditure under plea of famine pressure, as there is no question that, given the money, there are quite enough schemes which might be projected for the opening up of the communications of the country, or for increasing its system of irrigation, on which it would be profitable to employ all the labour likely to seek for employment in times of famine.

Ch IV. Qn. 7.

BENGAL.

Bengal.

Col. Haig.—If severe drought, calling for the employment of labour on a very large scale, and in an exceptional manner, occurs at comparatively long intervals, it will be extremely difficult to arrange for suitable projects ready for execution when relief measures become necessary. An irrigation scheme, which might be very suitable now, might, and probably would, be either useless or of little value 20 years hence, smaller and more directly remunerative works having been carried out in the meantime. Unless all ordinary expenditure upon moderate and well-considered schemes is to be stopped, it would be very difficult to say what works would be really suitable for construction in a famine 15 years hence. The probability is, as already said, that the works would be found to have been superseded when the emergency arose, and the whole of the money expended in the preparation of plans and estimates thrown away. In any case, I should say, such schemes should include only such works as had been sanctioned for construction under the regular rules. To admit works for which such sanction had not been given on account of their doubtful financial value would be to open the door to unlimited waste. But as sanction under the regular rules is only accorded to projects shown to be financially sound, why defer their execution till a famine occurs, when they will cost three times as much as if done in the ordinary course? In special reply to question 6, I may note that it would be easy to attach to the estimate of any work a statement showing the quantity of earth-work in each section of it, and the number of labourers probably required to execute it in a given time. This would be a guide in the selection of works for relief to meet the wants of any particular time of pressure.

Col. Cadell.—The scheme should, as a general rule, include only such works as have been sanctioned or appointed.

With proper foresight and the preparation of approved projects in advance, there should be little risk of Government being led into unprofitable expenditure in completing works commenced under the plea of famine pressure.

Bombay.

BOMBAY.

Colonel Anderson.—I would absolutely exclude all works of doubtful financial value. There is always plenty of work to be done of no doubtful necessity or utility.

Madras.

MADRAS.

Lieut.-Col. Mullins.—Whenever relief-works become necessary those which are the most likely to prove useful and valuable would naturally first be selected for execution, and afterwards others of a less promising description. In all cases projects should be completely worked out, and their character, whatever it may be, ascertained, before they are sanctioned for execution. This is essential, and it follows that to have to commence investigations after the need of relief-work has arisen is very undesirable. The risk of unprofitable expenditure will always be present to a greater or less degree with regard to all works the results of which are contingent on many circumstances which cannot be conclusively ascertained beforehand; but, on the other hand, the certainty of unprofitable expenditure when employment for crowds of people is wanted, and is not available, is absolute; and it would, during the famine of 1876–78, have been infinitely better had unpromising works been taken up instead of in many parts of country having no work which could be of value for the labourers to do. Not only was no good work sometimes done, but work which made the state of the country as regards its roads worse than it was before; so that more money will have to be spent in undoing what so much was spent on doing. No work need under proper arrangements be taken up which will not at least be of material advantage to the country when completed.

No work of magnitude need be undertaken without a reasonable probability that when relief operations cease its value will be at least equal to the cost of its completion.

Major Montgomerie.—For the answer to the first part see the answers to Nos. 3 and 4. Under proper management, no scheme of irrigation which will not at least be of material benefit to the country need ever be commenced as a famine relief-work; and no large scheme of doubtful remunerativeness without a reasonable prospect of the work being so far advanced at the cessation of relief operations that its completion would pay.

Colonel Foord.—On no account should works other than those sanctioned under the ordinary departmental rules be sanctioned as famine relief-works. The risk of Government being led into unprofitable expenditure in the case of very large schemes that have not been thoroughly considered in all details is so great as almost to amount to certainty. The risk is, of course, less in small works than in those of great magnitude.

Mr. O'Shaughnessy.—Work sanctioned under regular rules should be taken up for famine relief in preference to other works. Unsanctioned works should then be taken up, if necessary, in the order of their remunerative value. Works of a remunerative nature, and which are not likely to be executed in the "ordinary course," will be available in this district for any famine emergencies that may arise during probably the next 100 years to come. Government are more likely to be led into unprofitable expenditure by the incapacity of its advisers and agents than by any want of remunerative works to be carried out.

Major Mead.—Has already been partially replied to in the answer to No. 3; it is not supposed that waste can altogether be avoided; but the more carefully the schemes are prepared, and the more thoroughly their execution is supervised, the less will be the risk. Present experience seems to show that there is far more danger of waste from the non-completion than from the completion of works begun for relief purposes.

Lieut.-Colonel Prendergast.—I consider that works must be undertaken that the Government would not be justified in executing under ordinary circumstances, and that there must be expenditure that is unprofitable with reference to direct returns. Much, however, may be done that will be of considerable utility and of immediate advantage to the people, such as in opening out roads and canals, while the repair of irrigation works arrests deterioration, maintains existing revenue, and puts off the time when expenditure from ordinary funds will become necessary.

Mr. Traill.—Many of the works which would have to be taken up would not be sanctioned by Government in ordinary circumstances. Most of them, however, would be useful, although yielding no direct return—road-works (repairs), for instance.

QUESTION 8.—VALUE OF UNSKILLED LABOUR DURING FAMINE.

Is it probable that the amount of work executed by unskilled labour on any large work during the pressure of famine would be such that the exclusion of the expenditure on it would reduce the ultimate cost of such a work in any important degree, so as to be likely to render it remunerative, though, if otherwise executed, it would not have been remunerative. Can any illustration be given of such a case as that last referred to?

SUMMARY.

Those who do not regard the proposition as fallacious are for the most part of opinion that the exclusion of the cost of unskilled labour during famine on an unremunerative work would lessen the cost of the subsequent completion of that work to an extent which would render it remunerative.

PUNJAB.

General Maclagan.—It is conceivable that the exclusion of the payment for the unskilled labour employed on a work in time of famine might so affect the relation of the apparent cost to subsequent income as to make it appear remunerative; but this would merely be a defective and fallacious account. No illustration can be given of such a case.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—Under provisions of resolution of Government of India in Financial Department No. 2531, dated 11th December 1877, the cost of all famine-relief works is, in the first instance, to be recorded under a suspense head in the accounts of the Public Works Department. This suspense head is eventually to be cleared by charging to the Public Works Department the real value, at normal rates, of all work done, and the transfer to head of famine-relief of all expenditure, in excess of normal cost of work, due to want of skill and strength in labour employed. Under this rule the amount of unskilled labour employed on a work would not in any way affect its cost at normal rates.

Mr. H. B. Harington.—To answer this question some individual scheme should be presented for consideration, and I am acquainted with no such scheme. That a large work, in itself unremunerative, should be made remunerative financially by the mere fact that a part of it was executed as a famine-work, and that by excluding this portion of its cost the total cost of construction was, as a matter of account, so (technically) reduced as to make it a remunerative work, might, under certain circumstances, be possible, though very far from probable. If the selection or rejection of such a work were made to depend on mere financial results, it would, I think, be well to let it alone.

It might, however, well be that a work of general utility had hitherto been let alone because not likely to be financially remunerative, that no financially remunerative work could be substituted for it, and that its execution was the best means of saving life.

To reject it because unremunerative would be to neglect a recognised duty, and to forego a possible advantage, whilst to pretend that the reduction in cost might make it financially remunerative would be waste of ingenuity and time. The justification of the work would not rest on its financial value; and the only use of deducting, as a matter of calculation, its cost as a famine-work, would be to answer objections not perhaps worth the trouble of answering. No quibble in accounts will make an unremunerative work remunerative, or afford grounds for rejecting a work in itself of general utility and the best means of securing the end in view. If skilled labour cannot make the work pay, it is clear that unskilled labour will only make it more costly. Whether the extra cost should be incurred as the only available means of saving life is the real point at issue; and any financial jugglery that keeps this point out of view seems worse than useless.

Mr. Wall.—I think not probable. Relief-work labour is of course inferior to ordinary paid labour; the hands are weak and many of them unused to labour, but the wages are to some extent proportionately lower; and the quality of the labour tends to improve after a little time, as the paupers become better fed, stronger, and more expert.

I have not got the necessary papers to refer to, but I think a portion of the earthworks at Bánda, during the scarcity of 1874, was done as cheaply, if not cheaper, than the same work could have been done by the Public Works Department in ordinary times; but then, towards the close of the Bánda relief operations, I gave no money wages, only food, and that of the cheapest kind, viz., mahua (*bassia lotifolia*) daily, with a flour ration once a week.

I sent full particulars of my Bánda famine administration to the Secretary, Famine Commission, some months ago, while officiating judge at Gházipur. I kept no copy.

Mr. Watts.—Yes, I can conceive readily cases where, at the beginning of real pressure or towards the end of it, when prices were not so ruinously high, and the daily wage were regulated accordingly, a large number of able-bodied men and comparatively hearty women might be put on to a work, *e.g.*, a railway cutting or embankment, or the raising of a road, on which they would only be earning 1½ anna (or 1¼) and one anna a day each respectively. Well controlled, such cheap labour might still be most effective; and thus a work that it would not have paid to execute by ordinary labour, in ordinary seasons, might, from its initial cheapness, prove remunerative enough in the long run.

Ch. IV. Qn. 8.

North-Western Provinces.

But it would be much more difficult to carry out any work of this kind with labourers drafted from poorhouses; at least, my own experience is that, partly from weakness and partly from lazy independence (chiefly the latter), it is very difficult *for some time* to get these people to do any real hard work.

Mr. Kennedy.—The work done by ordinary relief gangs in this district has not been expensive. If children in arms are excluded, it has cost over Rs. 1-12-0 per 1,000 cubic feet on the Kant and Madnapur relief-work, the work at present in progress. The work done by the indigent gangs who form about one-sixth of the whole is, of course, expensive, and amounts, roughly speaking, to about Rs. 4-3-0 per 1,000 cubic feet. The ordinary rate for the work would have been Re. 1-8-0.

Mr. Sandys.—No large work has been executed in this district during the recent pressure which will be remunerative in any way.

At the rates now paid to the efficient gangs the Mahawa bund could be constructed at, I think, for two-thirds, if not half, the cost which would have to be incurred in ordinary times, and the zemindars of the villages, whose lands would be benefited by it, would willingly repay the whole outlay, with 6¼ per cent. per annum interest, in five years.

Bengal.

BENGAL.

Colonel Haig, R.E.—The question is, whether the amount of work executed by unskilled labour on any large work during the pressure of famine would be such that the exclusion of the expenditure on it would reduce the ultimate cost of such a work in such a degree as to render it remunerative, though, if otherwise executed, it would be unremunerative. I should say almost certainly not; the only work that could be done by famine labourers would be earth work, and that they could not complete, so that it would have to be finished off afterwards by the ordinary contractors, who would necessarily charge much higher rates than if they did the whole work. Besides, the earth work seldom exceeds a third of the whole cost of a work even in canals.

Colonel Cadell.—It is not probable that the exclusion of expenditure on work executed by unskilled labour on a large work during famine pressure would so reduce the cost as to render it remunerative when it would not have been so otherwise, but no illustration can be given of such a case.

Bombay.

BOMBAY.

Mr. Hughes.—Yes, in almost every instance. In illustration of a case of the kind referred to, I may cite the Shirsuphal tank in the Poona collectorate. The estimated capital outlay on this work is as follows:

A.—Direct Charges.

	Rs.
I.—Works	1,51,860
II.—Establishment	37,965
III.—Tools	2,861
Total A, direct charges	1,92,686

B.—Indirect Charges.

Capitilisation of abatement of land revenue on land taken up for the work	5,000
Leave and pension allowances	7,593
Interest on outlay during construction	4,178
Total B, indirect charges	16,771
Grand total, A. + B.	2,09,457

The annual average net revenue is estimated at Rs. 5,255, or 2½ per cent. on the total capital outlay.

The value of the work executed during the famine is Rs. 96,220.

If this is deducted from the estimated total capital Rs. 2,09,457, it leaves a balance of Rs. 1,13,237, on which a revenue of Rs. 5,255 would give a return of rather more than 4·6 per cent., and would thus convert a work which if it had been executed otherwise than as a relief would not have paid the charges for interest on outlay into one that would pay rather more than the rate of interest at which money can be borrowed.

The above is on the assumption that the charges other than the direct outlay on works would remain unaffected. If, however, it is assumed that the work is treated solely as a relief-work until the cessation of the famine, and it is not debited with the establishment and other charges on account of famine outlay, the result would be still more marked. Thus in this case, assuming the capital account to be framed after famine-work to the value of Rs. 96,220 had been executed, it would stand as follows:

A.—Direct Charges.

	Rs.
Works	55,640
Establishment	13,910
Tools	1,113
Total A, direct charges	70,663

B.—Indirect Charges.

Capitulation	5,003
Leave allowances	2,782
Interest, say	1,000
Total C, indirect charges	8,782
Total A. + B.	79,445

on which a revenue of Rs. 5,255 would give a return of nearly 6¾ per cent.

On this basis also the Ashti tank in Sholapur, which the Government of India estimate may in the course of years return a net direct profit of from 3 to 4 per cent., would become a remunerative work if the value of work executed during the famine were excluded. The estimated capital outlay on this work is Rs. 7,98,938, of which Rs. 5,55,418 is for works. The value of work executed during the famine is Rs. 1,46,419, and, excluding this, the total capital would be reduced to Rs. 5,92,339, as follows:—

A.—Direct Charges.

	Rs.
Works	4,08,999
Establishment	81,800
Tools	8,180
Total A, direct charges	4,98,979

B.—Indirect Charges.

Capitulation - - -	12,000
Leave allowances - -	16,360
Interest - - -	55,000
Total B, indirect charges -	93,360
Total A. + B. -	5,92,339

A revenue which would give a return of 3 to 4 per cent. on Rs. 7,98,938 would give a return of from 4 to 5½ per cent. on Rs, 5,92,339, or about the rate at which money can be borrowed.

MADRAS.

Lieut.-Colonel Mullins.—This question has been partly answered above. It must be a matter of judgment what magnitude of work may advantageously be taken up in a given locality. It will depend upon the circumstances, and in a great measure upon the weather, the character of which latter cannot be predicted, what proportion of any large work will be completed before distress comes to an end. One or two or three monsoons may fail. When the first fails some distress may have to be met, and it may be provided for by several small or one large work. Whether the next and the next monsoon will or will not fail cannot be determined beforehand, and many considerations would have to be taken into account in deciding whether large or small works would be the best for the intended purpose. Among these considerations would be the numbers to be relieved in particular localities, facilities for feeding the labourers, the need of permanent improvements, the effect on existing works of irrigation of one or other of the available schemes. For instance, a reservoir on a river might promise much advantage to the irrigation supplied from the river, but it may have been found that the financial results would not justify under ordinary circumstances more than half or two-thirds of the required outlay. With a probability of half or one-third of the work being done by famine labour such a scheme might be preferable to several small works.

The Upper Bellary project for a canal from the Tungabhadra to Bellary is a case of a large project which might with great advantage have been taken up directly it had been ascertained that large numbers of labourers would need relief. It would have been practicable to get work of the value of 50 or 60 lakhs done by famine labour, and about an equal sum would have been needed to complete it. An adequate return on the whole cost would be improbable, but it would have been well worth while to complete it. Labour representing much more than the first 50 or 60 lakhs has been supported without any useful result.

Major Montgomerie.—The answer to this question in a great measure depends on the definition of the term unskilled labour—

(*a*). If it is used in its ordinary sense, in contradistinction to skilled labour, and such labour is intelligently employed, the amount of work performed and its remunerativeness will simply depend on the duration of the famine and the nature of the scheme selected.

(*b*). If the term is applied to the method of employing labour in force during the later stages of the Madras famine, when all, whether able-bodied or not, have first to be reduced to one uniform level of destitution, and no more than a moderate task is accepted, then the amount of work performed will necessarily be much less, and the chances of its remunerativeness proportionately reduced.

(*c*). And if by unskilled labour is intended the work that can be performed by that class of the population which are unaccustomed to manual labour, the amount of labour done (although by careful management it may be appreciable), would hardly be worth taking into account in the selection of a scheme for famine relief.

Colonel Foord.—The exclusion of the amount paid for famine labour on a work would, no doubt, in many cases, so far reduce the cost as to make it profitable. Thus, supposing an irrigation scheme, comprising an anicut with channels and masonry works, had been for some time in abeyance because the anticipated returns were not considered sufficient to justify the outlay; then, if all the earthwork of the project were carried out by famine labour, the returns might be a fair per-centage on the outlay for the masonry works. But this is a mere manipulation of accounts.

Mr. Walch.—There can be no doubt, though I am unable to give an illustration, that many works which under ordinary conditions would be unremunerative would appear to be remunerative if all the work on them not requiring skilled labour were done by famine coolies, and the cost not charged to the works, but of course this would be a mere matter of appearance.

There are in the Presidency some already matured projects suitable for the employment of famine labour, such for instance as the "Sungam project" in the Nellore district, but which have not been of a sufficiently alluring character to lead to their construction from borrowed capital, as was intended, and these works would of course stand first on the list in the general scheme; but it must be accepted as inevitable that of that scheme many, if not most, of its component parts will offer no prospect of direct profit, but will come into the category of works of "doubtful financial value." More should not be expected than that works should be provided well suited to secure the immediate object in view, and which will prove of benefit to the community at large, or to considerable portions of it, so that some good may be brought out of evil, and a total loss of the labour and money expended may be prevented. For instance, the completion of the river embankments in the deltas of the Cauvery, the Godavari, and the Kistna to such heights and sections as will place them beyond fear of being breached in the highest floods that can reasonably be expected would, though not directly remunerative, be most excellent famine-works, as being of benefit to the whole community in putting into safety from a now threatening danger many hundreds of thousands of acres of grain cultivation, and because these works would lie in parts of the country which usually have surplus stocks of food grains, and to which the transport of the labourers and of food is easy. The construction of the "Grand Trunk Road," now only a road in name for the greater part of the way, through the Kistna and Godavari districts; the construction of a railway from Bezwada to the Hyderabad frontier to join there a line from Hyderabad, which it is believed the Nizam's Government would then carry out; the excavation of a canal from the Cocanada River to opposite the anchorage of that part; may also be named as examples of what good famine-works would be. These examples have naturally been named from among many others which suggest themselves out of the districts with which I am, or have been, connected, and doubtless every Public Works Department officer of any experience could supply a list of works of con-

CH. IV. QN. 8.

MADRAS.

siderable magnitude in his district on which famine labour might be usefully employed in fair healthy localities and tolerably easy of access. These two last conditions I take to be very necessary ones for such works. Out-of the-way works, to which it is difficult to transport labourers and food, or which lie in more than ordinarily unhealthy localities, however tempting in other respects, are not suitable to employ famine labour on. For instance, the boat canal from Bhadrachalam to Dumagudem, on the Upper Godavari, lately proposed as a famine-work, is, I consider, very unsuitable for the purpose, except in connection with any famine in its immediate neighbourhood, because it is difficult of access, and is in a place scourged with fever during several months in the year.

Mr. O'Shaugnessy.—It is not only probable, it is *certain*, that many works that are now put aside because they are not expected to yield a minimum amount of interest on expenditure would be highly remunerative if the value of work done by famine labour were not taken into account in the calculation of interest.

For example.—The Sungum project in this district, which is referred to in answer to Question 3. The Madras engineers calculate that it can be completed in five years in the ordinary course; that it will cost 27 lakhs of rupees, and that it will yield an increase of revenue of 8 or 9 per cent. on the outlay. The engineers of the Government of India assume that it will cost 43 lakhs; that the work cannot be done in less than seven years; that the increased revenue would not be obtained until 20 years after the work were commenced; that by that time it would cost, including interest, 80 lakhs; and that the increased revenue would not pay the current interest on the *capital* that would be expended upon it. The Government of India have time after time, by such advice and on the strength of calculations that are founded on mere assumption, refused to give the necessary sanction to this project, which, if commenced eight years ago, as desired by the Government of Madras, would have saved the lives of hundreds, if not thousands, of people, and have saved lakhs of rupees to Government during the past two years by having made a large population independent of famine relief. Out of the total estimate of 27 lakhs, work to the extent of 16 lakhs was eminently suitable for the employment of famine labour. If the work had been carried out to this extent during the past two years, the work remaining to be done would cost 11 lakhs; and if only this amount were debited to the work, it would yield about 22 per cent. per annum in increased revenue; work to the extent of 16 lakhs could and would have been carried out on this project by relief labour during this famine, but the Government of India would not, it is supposed, allow it to be undertaken, though, it is believed, pressed to do so by Sir Richard Temple, as well as by the Government of Madras. Many similar instances could, no doubt, be given in which the obstructive advice of Bengal officials has frustrated the efforts of Madras officers, and has caused grievous injury to the people and immense loss to the revenue of this Government.

Major Mead.—Not understood; nine-tenths of the cost of any work of the class contemplated will always be for unskilled labour, and the exclusion of this nine-tenths will, of course, affect the financial result.

Lieut.-Colonel Prendergast.—I think it is probable that, by the exclusion of the expenditure by unskilled labour on a large work, the ultimate cost would be reduced so much as to render the work remunerative, though otherwise it would not have been so. If earthwork on a new project is estimated to cost a considerable portion of the estimate, this may be expected to be the case. I cannot illustrate this from actual experience, but I conceive it is a fact in works such as the Buckingham Canal, the railway from Conjeveram to Chingleput, the Bellary-Hubli Railway; for if the deduction of the value of unskilled labour would not actually make the works remunerative in the direct form of a fixed per-centage, though diminished cost might turn the scale whether the work should be undertaken or not. On the Kaveripak Main Channel from the Palar anicut in North Arcot the channel was improved and widened for three miles, and two masonry drops were built there; by far the greater portion of the expenditure was incurred by famine labour. There was no direct remuneration to be obtained, as additional land was not brought under cultivation; but, by excluding the expenditure on unskilled labour, great results have been obtained for the outlay on the two masonry drops.

Lieut.-Colonel J. W. Hunter.—If no subsequent charge were made against the ordinary heads of expenditure for work done by famine labourers, such work would be undoubtedly remunerative; but the practice has always been to charge the normal value of such work to ordinary heads of expenditure and the balance to famine. In the case of the flood banks of the Cheyaur, the work was done by famine labour; then an estimate made as to what it would have cost at normal rates; this was charged to ordinary irrigation and the balance to famine. Had ordinary irrigation been presented with the famine out-turn, the result would certainly have been remunerative.

Major Vibart.—It is certainly possible to imagine works which, executed in the ordinary way, would not be remunerative, but from which, if work executed by unskilled labour on it, during famine, was excluded, would pay. To the east of the Udiarpolliem taluk there are the remains of a very large tank which received its supply from the river. This would, perhaps, be remunerative if restored, but if the cost of famine labour were cut out I should imagine there would be no question that it would but pay.

CH. IV. QN. 9.

QUESTION 9.—SHOULD LARGE WORKS NOT SANCTIONED BY PROPER AUTHORITY BE INCLUDED.

Could large works not sanctioned by proper authority, for whatever reason, be properly included in the scheme of works, and if so, what preliminary steps should be regarded as requisite before actually putting them in hand if severe scarcity arose?

SUMMARY.

Those who are not opposed to the execution of such works assume that plans and specifications and an estimate of their utility have been prepared beforehand.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—I think it would be very dangerous to authorise commencement of unsanctioned works of importance for purposes of famine relief. The preparation of a scheme of works for future use implies careful consideration of probable cost, and remunerative character of each work; and if these features have been determined with reasonable accuracy, there should be no difficulty in obtaining the decision of the proper authority as to whether the work may or may not be executed for purposes of famine relief.

Mr. Sells.—I presume that the local government could at all times sanction the setting on foot of any "large works," and I apprehend that there would in no district be so very sudden a call for *large* works as to make it impossible to await Government sanction, presuming that on emergency that sanction can be accorded without the intervention of any great formalities. A coming famine must always, I should say, cast its shadow before it, and the cost of any vast works might, I think, be easily estimated, approximately at any rate, before it would be absolutely necessary to put them in execution. My own view is, that as soon as prices reach such a height as betoken severe pressure upon the poorest classes—and practically it would not be difficult to fix this point—"test" works of the easiest sort of labour, raising roads, for instance, filling in large ponds, such as almost all large towns have round them, &c., should be opened, at subsistence wage. These would act as a safety-valve, and would, at the same time, be a gauge of the demand for work. Some discretion should be allowed and the expenditure of funds be sanctioned liberally, and the manner of executing the works, and decision as to the method of payment, should be mainly in the hands of the district authorities, except where the works are carried on by purely distinct departments, as, for instance, extension of canals and drainage lines. The suggestion of schemes should devolve separately upon—(1) the district authorities, and (2) the Public Works Department in its several branches, but the preparation of projects, when once suggested, should rest upon the Public Works Department; and that department should also be responsible for seeing that, in the event of relief-works being required, those works should claim precedence which are most suited to the purpose, and not those which promise the best ultimate results, and would afford opportunity, meantime, for the maturing of more extensive and costly works. And I understand that it is proposed that a list of these should be always kept ready for emergencies, at least so I interpret the expression "scheme of works."

Mr. Sandys.—The construction of—

1st. Mahawa bund,
2nd. Ganges khádir bund,
3rd. Filling in three deep excavations outside the boundaries of the Budaun municipality,

are large works which may not be sanctioned by proper authority, but which might be included in the scheme of relief-works. Nos. 2 and 3 should only be put in hand as such if severe scarcity arose, and the immediate drafting off of all able-bodied labourers to important works in progress in other districts could not for any cause be carried out.

Mr. Cornwall.—The only preliminary that seems necessary is to have a proper survey of such works undertaken, to ensure that in the haste work should not be done which would afterwards have to be rejected as useless. No work should be commenced before the completion of the survey. I am not in favour of keeping up a separate list of famine projects.

Mr. Adams.—I confess that I do not understand this question. If there be a proper scheme of works, all works fit for the purpose of relief should have been included in it; and apart from the condition considered in my answer to question 7, I can conceive only two cases in which it could be necessary to commence other works, viz., 1st; if pressure occurred before the completion of the "scheme;" 2nd, if the scheme had included only the financially paying works, and that all these had been executed, in which case it might be necessary to employ the people on a work which had not been sanctioned.

Mr. Barstow.—Large unsanctioned works might be included in the scheme, but sanctioned works should take precedence of them. The sanction of Government should be necessary before putting the former in hand.

BENGAL.

Colonel Haig.—Large works not sanctioned by proper authority should, under no circumstances, be included in a scheme of famine-works.

Colonel Cadell.—Works not sanctioned or approved by proper authority might be included in the scheme of works in exceptional cases.

In such cases approximate estimates should be required, so that the liability to be incurred should be ascertained as nearly as possible without the preparation of the detailed estimates.

BOMBAY.

Colonel Anderson.—If proper provision in anticipation of need had been made, there would be no necessity for resorting to unsanctioned works, as a rule.

MADRAS.

Lieut.-Colonel Mullins.—It would not be difficult to arrange to obtain the approval of the proper authority to the entry in the scheme of relief-works to meet future famines; and if the investigation of irrigation projects be taken up on any systematised and intelligible plan, it cannot be long before there will be many schemes worked out which, while not giving a prospect of adequate returns to warrant their execution under ordinary circumstances, will be of very great use whenever again employment for distressed labour has to be found. There need, it is thought, be no safeguards erected against the putting in hand of any schemes which have been fully investigated and not altogether rejected. What are required are safeguards against the absolute waste of money resulting from having vast numbers of labourers and nothing useful for them to do.

CH. IV. QN. 9.

MADRAS.

Colonel Foord.—This has already been partly answered. If, for any reason, it should be determined to put in hand works not sanctioned by proper authority, then before the work is actually commenced, if detailed plans have not been prepared, every effort should be made to get at least rough plans, specifications, and estimates prepared, to prevent mistakes being made and consequent loss being incurred. The risk is, of course, lessened if intelligent supervision is available.

Mr. Walch.—With a properly prepared scheme, carefully considered and provisionally sanctioned by the Government, ready to hand, there would never be any necessity to commence unsanctioned works for relief; and though, as before said, it is inevitable that many of the works in the scheme would be what is called "unremunerative," there need be no "waste," in the proper meaning of the word; waste and loss of life there certainly would be, as there has been, if no such scheme were ready.

It will not do, experience has proved it, to leave such a vital matter to be dealt with haphazard, when the emergency arises, without any special previous provision. Delay, confusion, and the waste must be the result of such unreadiness. The preparations to combat famine in India should be kept in order in times of plenty as carefully as the preparations for war are maintained in the times of peace. It is notorious that for want of such preparations the commencement, at all events, of the recent famine campaign was disastrous.

Mr. O'Shaughnessy.—Unsanctioned works and works that would not be sanctioned in the ordinary course, because of their unremunerative character, and because they would not, though even of considerable use, be considered worth their cost, could be included in a scheme of famine-works. The only preliminary step that seems requisite before putting them in hand would be to classify them according to their relative remunerative value or importance, and to take them up accordingly.

Major Mead.—See answer to No. 4. All works should, if *possible*, be properly considered and regularly sanctioned beforehand; but if no regularly sanctioned works are available, unsanctioned ones must be taken up. Rules must give way to emergencies.

Lieut.-Colonel Prendergast.—Large works not sanctioned by proper authority may be included in a general scheme if the project has been well considered, its general features determined, and if there remain only minor details to be worked out. Thus, supposing for the extension of the Buckingham Canal southwards, through South Arcot and Tanjore, if levels have been taken, if the line has been surveyed and laid down on a plan, then orders might be given for commencing work; for as the project has been already accepted, as of benefit to the country and suitable for the employment of relief labour, the estimate is not really of consequence. The work has to be done, and the commencement in anticipation of sanction to a definite sum will not affect the outlay. There will still be much to be done in drawing out plans for the masonry work for bridges where roads cross, and in the way of providing for cross drainage; but with a sufficient executive staff this work can be carried on at the same time, and the estimate may be drawn up in parts for sanction while the earthwork is under execution.

Lieut.-Colonel Hunter.—I think that such circumstances might arise, in which case the urgency of the case might be decided by the local officers in consultation, a report being then made to Government, who would thus have the power of stopping any work that appeared to them ill-advised; experience seems to show that no reliance whatever can be placed on estimates where famine-work is concerned.

Major Vibart.—As a rule, all works placed in the list of schemes of work for future use should be sanctioned by proper authority, and if proper attention is paid to the subject during the next few years the list would be quite complete. Should, however, a famine recur before proper arrangements have been made, large works which have not been previously entered in the scheme of works might be made use of on emergency, but they should be visited by the chief engineer in person (together with the local authorities, superintending engineer, and collector), so as to satisfy himself, as far as possible, that they would be remunerative, or at least indirectly beneficial to the district.

Mr. Traill.—There are no works in this division, in my opinion, which are of such magnitude that, if severe necessity arose, their commencement could not safely be left to the discretion of the divisional officer in consultation with the civil officer in charge. It should, I think, be sufficient that the divisional officer should inform Government what he intended doing, so as to give them the opportunity of countermanding the work if they thought proper. Estimates for famine-works are, in my opinion, of little use, as they are always exceeded, and nobody can be blamed if they are so.

CH. IV. QN 10

QUESTION 10.—RISKS ATTENDING ABSENCE OF SUITABLE PROJECTS.

Considering the circumstances under which labour is applied on relief-works, is the risk of waste by reason of there being no regularly prepared scheme ready really great? Is there danger, in the absence of suitable projects ready for immediate execution, of the suffering population being left without proper relief until the necessary relief-works have been prepared for execution? How far might the intelligent action of the several branches of the Public Works Department be made to supply, from among projects in course of execution or ripe for it, what was requisite? Could this end be sufficiently secured by distinctly making the Public Works Department responsible for bringing forward suitable works whenever pressure from scarcity arose; and, so far as was necessary and practicable, setting aside or postponing the ordinary work not suitable for relief purposes?

SUMMARY.

The greater number are of opinion that the absence of well-considered schemes would involve delay in affording relief to the population, hasty preparation and subsequent waste. Those who are of the opposite opinion say that there are many ways of employing the people in the early stages of famine during the preparation of special schemes, and that ordinary works would serve that purpose for a time. The responsibility for meeting the necessities of the case is divided between the Local Government and the Public Works Department.

PUNJAB.

General Maclagan.—With reference to the first of the questions, there is risk of waste in the execution of any work, if it is not estimated in detail and properly laid out before it is allotted to the workpeople. But it cannot be said that waste would be a consequence of there being no regularly prepared scheme of works. The safeguards against waste are provided, if such work that is put in hand for famine relief is systematically dealt with in detail both before and during the construction, though it may not have belonged to a general scheme.

Any large project taken up in haste and put into shape on short notice would be liable to be insufficiently considered and in one respect or other unsuitable. Small works, which, though otherwise not so desirable, are yet often necessary and most useful, can be more readily prepared for relief purposes without risk of waste.

When in any district there are no proposed works of utility of a suitable kind, and the need for such employment arises, then either the people must be passed on under arrangements suitable to the occasion to certain large works elsewhere, or (if for any reason relief must be local) works have to be invented, having no definite purpose but to provide the people with food and some means of earning it; in such a case there is waste in the way of misapplied money, though perhaps no waste in the way of work incommensurate with expenditure. And under the circumstances proposed this would not be prevented by a prepared scheme. It is illustrated in the account of the relief operations in the Delhi Division in 1861, when the Commissioner wrote: "The labour of a vast multitude, "which would have been lost, possibly for ever, was "turned to good account, and many of the works "then made are likely to prove permanently useful." (No. 241, dated 20th November 1861, to the Honorary Secretary, Punjab Famine Fund.)

If no work of any kind can be given to the suffering people, there is of course danger of their being for a time without proper relief, that is, earned relief. To avoid this, the chief thing required is a supply of tools in each district.

How far the action of the Public Works Department might be made to supply, from among projects in course of execution or ripe for it, what was requisite, has been indicated above. But directly, at any particular time, it would depend on the state of progress of the works. For, as before observed, works which are wanted, and for which money is provided, would not be held back in order to form a reserve of employment for the suffering people in some unforeseen future time of scarcity. The Public Works Department could scarcely undertake to have suitable works to bring forward in any particular part of the country whenever pressure from scarcity arose, but within the limits of a province this could be arranged. Only it is to be remembered that the Public Works Department is now a divided department, and the responsibility for suitable works would be divided. The local government has no longer the control of all the works going on within the range of its administration. Provincial general works and irrigation works, though under separate direction, are under the local government's orders, but not military works and State railway works.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—There is to my mind great risk of waste on occurrence of famine where no previously considered scheme of relief exists.* The suffering population would not, in the absence of suitable projects, be left without proper relief, but would be employed on any trumpery useless works which might suggest themselves to despairing magistrates as suitable for employment of the distressed poor. The Madras Government found itself facing famine without any scheme of relief-works, and what has it got to show for its famine expenditure? The Bombay Government had (thanks to Colonel Fife, the Chief Engineer for Irrigation) a number of useful irrigation projects, suited to purposes of famine relief, all ready prepared, and has come out of its famine difficulties with the greatest credit for economical application of its famine labour. I do not think that reliance could be placed only on projects in ordinary course of execution or preparation to afford full relief in time of famine, save under exceptional circumstances, such as the actual excavation of a large canal at the time when, and in the locality where, famine occurred. The local Department Public Works should, of course, be empowered to modify its ordinary programme so as to afford the maximum of relief to the distressed poor; but this programme would not, as a rule, afford sufficient relief of itself, and other suitable projects could only be brought forward for execution in a suitable manner, if they had been well considered beforehand.

Mr. Plowden.—I should say there is little risk of waste by reason of there being no regularly prepared scheme of *work for famine relief;* because there are always other ordinary works for which projects have been prepared, on which at the outset the persons in want of employment might be given occupation.

There would thus be no danger of the suffering population being left without proper relief.

Mr. R. M. Edwards.—No, there is not the least danger of waste, or of the people being left without proper relief, in consequence of there being no suitable projects ready. There are always numerous works available for which administrative sanction has been obtained, and there is neither difficulty nor risk of any kind in commencing them as soon as the district authorities, who are the best judges, see the necessity. They, *i.e.*, the district authorities, should point out the localities where relief works are most urgently required, and the Public Works Department should do everything else.

Mr. H. B. Harington.—The scheme should be now so prepared as to reduce the inevitable risk of waste entailed by famine labour to a minimum.

Whatever that risk be (and it might be considerable), not to avoid what is avoidable would be to convert the risk into a certainty. There *is* real danger of the suffering population being left without proper relief if projects, suitable in themselves, and that should be ready for immediate execution, are yet undergoing the process of having their suitability discovered or discussed, or of going through the many stages along which they have to be prepared for execution. It is not for me to say what "the intelligent action of the several branches of the Public Works Department" might do, or fail to do, under

* Extracts from No. 1127-1982, dated 3rd August 1878, from Officiating Chief Engineer, Mysore:—"When famine-relief "works on a large scale were started here last September, there "were very few suitable projects prepared or sanctioned on "which to employ the pauper labour. As there was then no "time to lose, it was necessary to begin various works which "appeared likely to be of utility, without previously estimating "what would be their cost. Some of these are large schemes "of which only a portion could be done during the famine"... ....., of these "the entire projects should, according to "rule, be submitted to the Government of India as early as "possible. *But this would involve the elaboration of schemes "which there is no early prospect of carrying out,*" &c.

Ch. IV. Qn. 10.

North-Western Provinces.

the circumstances contemplated. That very much might be done by such intelligent action under sagacious control is too clear to need stating. Whether projects in course of execution or ripe for it would suffice to meet the exigencies of an extreme crisis, would depend on specific questions of detail; and generally on whether schemes under or ripe for execution were still so backward as to make necessary for their completion the employment of the starving population thrown on the hands of Government, and would afford sufficient employment for the starving population.

That unnecessary schemes should be taken up, whilst works equally adapted to the end in view, ripe for execution, and perhaps actually in progress, were neglected, is a contingency not pleasant to contemplate, or likely to occur.

That the Department Public Works should be distinctly made responsible for bringing forward suitable works whenever pressure from scarcity arose goes without asking, so long as it be meant that the suitable works that they are to bring forward are works sanctioned and in course of or ripe for execution. If it be meant that the original suggestion of suitable works be made the duty of the Department Public Works alone, the end will not be sufficiently secured, for the initiation of such works does not and should not lie with that department, and the suggestion would in any case be made too late. However this may be, the question of sufficiently securing the end in view by the means suggested must depend on whether the distress is or is not such as could be met by the simultaneous undertaking of such suitable works as may happen to be ripe for execution at the time being. Of course, ordinary work not suitable for relief purposes should, so far as necessary and practicable, be set aside or postponed. To throw on the Department Public Works such responsibilities as naturally lie on the district officer would be to put the saddle on the wrong horse, and to miss rather than sufficiently secure the end in view.

Mr. Kennedy.—The efficacy of aid from the relief-works suffered last year chiefly from the delay in starting them, and from the want of suitable rules as to conditions of work and wages, and not from the want of previously prepared schemes. If these schemes had all been sent up to the Government for sanction, there would doubtless have been delay. But the works requisite at the commencement of a famine are for the most part small, and the authority to sanction them vested in a Commissioner prevented any loss of time; and, on the other hand, it may be assumed that schemes hastily prepared have not been thoroughly thought out, and that the works of the greatest public utility are not always first chosen. The works first taken up in this district were taken up because they happen to have been previously considered and worked out, but they were situated at the extremities of the district, where they could not afford all the relief that the same expenditure in a more favourable situation might have done. Where a number of projects have been worked out, those best adapted to the circumstances can be selected, whereas we had to be content last year with taking those which were in a sufficiently forward state of preparation to admit of their immediate execution.

Mr. Sandys.—The risk of waste would be really great unless the scheme prepared by the Public Works Department were such as admitted of all applications made by district officers for additional establishment being promptly met.

There would be no danger of the suffering population being left without proper relief, as, if the necessity occurred, district officers would at once be authorised to take in hand as many relief-works as they considered were required, although regular sanction to the plans and estimates had not been accorded. The works ordinarily in course of construction in this district under the Public Works Department would not supply what was requisite if severe scarcity arose; but this end could be secured by distinctly making the Public Works Department responsible for bringing forward suitable works, either in this district or elsewhere, as soon as the pressure first began to be felt, and for postponing all ordinary works not suitable for relief purposes.

Mr. Sells.—I do not think that there would be any inordinate waste resulting from the absence of any regularly prepared scheme, while on the other hand there may certainly be danger to the people in delay. For instance, such works as I have alluded to above, as test works, should certainly not await the formality of preparation of exact plans and estimates. Direct sanction from Government should be sufficient. And district officers should not, in my opinion, be hampered with instructions of too minute a nature, or with calls for elaborate returns.

Bengal.

BENGAL.

Colonel Cadell.—There is no doubt that, considering the circumstances under which labour is applied on relief-works, the risk of waste from the absence of regularly prepared objects is really great, and that the want of carefully prepared projects might cause delay in affording proper relief to the suffering population. In Bengal by far the greater proportion of the works required in the event of famine would be carried out by local committees, and not by the Public Works Department, which could not be held responsible for bringing forward suitable works in time of scarcity, unless all district works now carried out by local committees were placed directly under the Public Works Department.

Colonel Haig.—There is no doubt that, in the event of famine occurring without any regularly prepared scheme of works being ready for execution, there would be great waste. Large sums would be inevitably thrown away upon hastily improvised works which would afterwards be found useless or not worth the maintenance. If proper schemes are not ready, and the starving people must wait till they are ready, no doubt numbers must die. But I cannot see how the Public Works Department could fairly be held responsible for bringing forward suitable projects whenever pressure from scarcity arose, unless the preparation of new and revision of old famine schemes is to be a regular part of their duties; and as it is would certainly cost money, it is highly probable that it might be found cheaper to carry out the works at once in the ordinary course than amid the confusion and hurry of famine. If there is famine, and the Government is to interfere in such a way that the people shall not die, there must, under any circumstances, be waste—enormous waste—which the most carefully considered preconcerted arrangements will only slightly mitigate. The Public Works Department might possibly be more properly held responsible for not carrying out the works which would have prevented famine.

BOMBAY.

Colonel Anderson.—I do not consider that there should with ordinary discretion be any risk of waste from regularly prepared schemes not being ready. At the worst there are always a number of main lines of road in a district constructed as fair-weather roads, the turning which into roads of a superior description would always supply most useful work to a large number of people for a limited time. There is also the great wear and tear of ordinary trunk lines consequent on the increase of traffic in a famine to be provided for. I assume that famine would not break on the country at once, and that some month or two for provision would always be afforded.

MADRAS.

Lieut.-Colonel Mullins.—There is not risk only, but absolute certainty, of great waste of money if projects suitable for the employment of the distressed be not completely ready before such employment is actually wanted. The experience of this has been far more than ample. There was in the famine of 1876–8, so far as the Chief Engineer for Irrigation is aware, no withholding of relief because there was no work ready to be done. The people were fed throughout almost entirely irrespective of work done, even when work was available. The Public Works Department, given the requisite means, can properly be held responsible that suitable works are ready whenever the pressure of scarcity arises. Without such means this department will be circumstanced as it was in 1876, when in the Irrigation Branch but little work was generally available in the localities* where distress was greatest and the people needing employment the most numerous, though, where there was no famine and no distress other than that arising from high prices, which were universal, there were considerable works ready for execution. In the Godavari, Kistna, and Tanjore Deltas, where extensive irrigation had been already provided, the famine not only was not prejudicially felt by the agricultural classes, but it brought them to more than the usual prosperity.

Major Montgomerie.—See answers to Nos. 3 and 4. If the Irrigation Department is placed on a proper footing, as already suggested, there will be no lack of suitable schemes ready for the employment of famine or any other labour. What has to be guarded against in seasons of famine is the misapplication of this labour, either during the first stages of the distress, when the necessity for affording relief is likely to be ignored until the people are beyond labour, or afterwards, when the Executive is almost certain to be hampered by over-legislation.

The Public Works Department is quite capable of suggesting and carrying out profitably works sufficient for the relief of a great deal of distress, but the head of the department must be permitted to make his own arrangements for the management of the labour given to him to employ if it is intended to obtain anything more than a mere nominal value for the money to be expended.

There can be no question that the risk of waste is really great, in nearly all cases, when large famine-relief works are commenced before the plans and estimates for them have been fully considered and sanctioned in due course. In certain kinds of work the risk is of course less than in others. For example, the Buckingham and Junction Canals on the East Coast were commenced before the plans and estimates were prepared and sanctioned, but the works had been under consideration a long time. The general course of the canal and the nature of the soil were known, and, the country being nearly flat, there was little difficulty in setting out the work in advance of the working parties. Besides, these works were under the charge of qualified officers of the Public Works Department.

It has already been suggested that lists of useful works should always be kept ready in all districts, to be available for times when it is necessary to give employment to an unusual number of people. There cannot, however, be any necessity for postponing ordinary works, which it may be assumed are works really required, and, if so, they must be as suitable in seasons of famine as at other times.

Mr. O'Shaughnessy.—A great famine does not rise at once; it comes on gradually and visibly, taking many months to reach its highest intensity. The ordinary works of a district could on emergency give useful employment for several months to two per cent. of the population, which would be five or six times the numbers of people ordinarily employed. It takes, according to past experience, several months before two per cent. of the population require State relief, and there would be time in this period to prepare fresh schemes, and there need be no great waste of expenditure,* even though a complete scheme of famine-relief works was not ready beforehand; nor would there be any danger that persons requiring work as a means of relief would be kept without employment. The Public Works Department should have no difficulty in giving employment to all persons seeking relief-work, or to persons sent to it for relief-work, and it might be held responsible to do so.

Major Mead.—There is not only risk, but certainty, of the greatest waste of money and also of hardship to the suffering population from there being no properly prepared scheme of relief-works. All that is wanted might be done without fail by the Public Works Department, provided that department is so far augmented as to have a strength commensurate with the requirements of the country, and is made *entirely independent* in its executive action in regard to works the advisability of carrying out which has been decided on.

Lieut.-Colonel Prendergast.—If there is no regularly prepared scheme there is the risk of funds not being applied so satisfactorily as if the district officers had their plans and estimates ready at hand; and according to the suddenness and intensity of the distress, there will be the danger of waste. But as in the famine that has now passed over the country there was warning of its approach, and measures were taken to meet it, it may be anticipated that, in future, there will be better preparation, and the risk of much waste will be diminished. As proposed in paragraphs 2 and 3 above, if estimates are kept on record, sanctioned, and ripe for execution, these may at once be undertaken by the Public Works Department. Works in course of execution are not so well suited for an emergency, for they are probably given out on contract. But it is my opinion that these works may go on simultaneously with the relief-works proper, so that the labourers employed on them may still have their accustomed occupation. I see no reason why ordinary budget funds should not be supplemented by grants from famine funds, so that budget works might be pushed on rapidly to completion and fresh works undertaken, instead of the ordinary departmental operations being suspended.

---

* Nellore, Madura, and North Bellary excepted.

* This assumption is not borne out by general experience in the late famine.—G.A.B.

CH IV. QN. 10.

MADRAS.

Mr. Bundall.—Yes, there is great risk of waste by reason of coolies not being employed on *large* works. At the same time, reviewing the districts at present in my charge,—Trichinopoly, Tanjore, Mandura, and Tinnevelly,—I know of no really large works which could be undertaken. Those I have named are second or third class works in point of size which would not afford work for more than 20,000 to 30,000 people for a few consecutive months.

Tank and road repairs could always be undertaken by the Public Works Department; the local officers, as a rule, having estimates in excess of the sums provided for allotment. When a large proportion of the population have to be provided for, small works should be closed and large ones opened to concentrate supervision. The Public Works Department can be responsible for the bringing forward suitable works only when establishment is given them to work up such schemes. The present scale of Public Works establishment in Madras allows no margin of officers for working up schemes and projects.

CH. IV. QN. 11.

QUESTION 11.—DIFFICULTY OF FINDING SUITABLE RELIEF WORKS.

Has there been practical difficulty in finding suitable relief-works during the recent pressure? If so, where and how? Make any suggestions on the subject of providing relief-works which may aid in meeting the difficulties that are found to arise in practice.

SUMMARY.

Difficulty in finding suitable relief works seems to have existed only in the Madras Presidency, owing principally to want of preparation.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—There was apparently the very greatest difficulty in finding useful works for relief of distress during the late famine in Madras. The only large famine-relief work that I know of in that Presidency is the East Coast Canal, of which the alignment and design are exceptionally rudimentary. It is simply a large ditch, running, generally parallel to the coast, right across the drainage of the country. In many districts of Bombay there would have been great difficulty in getting up suitable projects in time for relief of famine distress; but the existence of Colonel Fife's schemes in a matured form prevented any necessity for preparing others. The readiness with which the Government of North-Western Provinces, during the late time of anxiety, prepared an extensive scheme of famine relief, was entirely owing to the existence in an advanced state of completion of projects for the Sardah Canal and other works; but I do not think that we should be justified in taking for granted that projects will always be available, unless direct orders are given that they must be so.

Mr. Edwards.—There has been no difficulty. When the number of labourers increased to say 40,000 or 50,000 men, and became too numerous for proper district supervision, the commencement of railway extension was strongly advocated; but the consent of the Imperial Government was requisite, and it was said not to be forthcoming. In consequence of an abundant rainfall the necessity soon passed away, and the numbers rapidly diminished. I can make no suggestions for the removal of purely imaginary difficulties.

Colonel Clark.—There has been no practical difficulty in finding suitable relief-works, and unless the numbers are enormously large there should not be any difficulty.

In this district the distress commenced in June, when the agriculturalist saw there might be no rain. It increased in July, when the kharif sowings had withered away, for so much edible seed had been lost. From that time to 11th February many must have known what distress was. Relief-works were opened on 11th February, first to aid the agriculturist over slack time till the rabi should be cut. In March the rabi was being reaped, and therefore works were closed. But in June 1878 the poorer classes had to be aided, and then relief-works were carried on till 15th October, by which time the coarser food-grain rain crops had to be reaped, and the better class had commenced being cut. During this time, by applying the wage and appearance test, the number did not assume any large proportions, and they melted away without any pressure as the grain got cheaper and there was field work to be done.

Mr. Blennerhasset.—There has been a difficulty in finding suitable relief-works in this district.

Large sums are being spent on district roads, which ordinarily would not be so spent.

Collectors cannot, under ordinary circumstances, provide a large amount of earthwork, and this is what is required.

If new district roads, or light-railway extension, or tank and old river-bed irrigation schemes, had been ready prepared, it appears probable that some more profitable undertaking than that now in hand would have been selected.

Mr. H. B. Harington.—In this district the pressure was not so great as to create any great practical difficulty in finding suitable relief-works. The assistance of Government was so readily accorded that the means of relief were found almost as soon as the distress was made known. The difficulties found to arise in this district were not such as to demand more than the exercise of ordinary intelligence and cordial co-operation between the Department Public Works, the district officer, and the Commissioner of the division, backed up by the assurance that the local Government would promptly sanction any well-digested scheme of relief. I do not think I am called on to make suggestions as to how to meet difficulties which I have not found to arise in practice.

Mr. Macdonald.—As far as the Tarai is concerned, there has been no difficulty in finding suitable relief-works. Repairing roads, filling unsightly excavations, digging and rooting of waste lands, fencing of forest reserves, and similar works can be done by the population, and there is for years plenty of room for work of the above nature.

Lieut.-Colonel Fisher.—There has been no practicable difficulty in finding suitable relief-works during the recent pressure, and I anticipate none in the future; and this is one of the chief reasons why I should object to being tied down to a scheme which may or may not be calculated to afford relief when the emergency arises. Roads must always need repair in portions of this district. Drainage and excavation work must always be procurable at very short notice; timber, lime, stones, and slates must always be required for the year's maintenance work; so why a district officer should be tied by the hands to a scheme which may not include the work most needing execution when famine comes is more than I can account for.

Mr. Spedding.—There has been no practical difficulty in finding suitable relief-works during the recent pressure, but, as I have elsewhere reported, the chief relief was given by cooked food in workhouses, of which 10, with three large hospitals, were kept open in the district for as long a time as they were required.

Mr. Ward.—In this district the difficulty of finding suitable relief-works did not present itself. All the persons likely to need relief could have been employed on works urgently needed until the provincial schemes were ready.

But the difficulty of obtaining prompt sanction to projects at the commencement of distress is undoubtedly an evil. Precious time is lost while a collector is debating whether he can conscientiously ask for an allotment on the ground that the people are starving.

The true experimental test is the actual readiness of the working classes to work for less than their ordinary remuneration. Suppose a collector to be riding or driving about his district at a time of great scarcity, he will find numbers of able-bodied men idling about with whom he can enter into conversation about their condition. They will tell him that they want work; that they are ready to work, if they could only get it, at an anna and a half a day. Let him take them at their word. He will not have far to look for some improvement wanted—some ugly pit to be filled up; some embankment to be repaired; some festering old buildings to be pulled down and levelled. Let him calculate the cost at a reduced rate, and offer to pay the men a lump sum when it is finished. If they don't agree, no harm is done. If they do, he has the nucleus of a gang of men to do earthwork at reduced rates.

It may safely be left for them to determine in their own homesteads which of the family shall work; how the employment shall be shared by the women and children; and who shall stay and keep house. Headmen of the gangs can be elected afterwards, and the rate can be raised, if it be absolutely necessary, in proportion as the price of grain rises.

It would be an advantage to collectors if some authenticated table of rates were published.

The rate for ordinary earthwork can be easily ascertained; but the kind of work which, more than any other, is suited for unskilled labour, is earthwork with a long lead. Half-a-dozen men are sufficient to supply with earth the baskets of some 50 or 100 women and children, if the distance it has to be carried is considerable; but I have been unable to obtain from any book, and my district engineer was wholly unable to calculate what addition should be made to the rate per 1,000 cubic feet of earthwork for every additional 100 feet of lead.

One great object to be kept in view is that all works undertaken should be either remunerative in money or supply an actual want. A collector administering a fund at his own disposal is tolerably certain to spend it economically; but if all he can do to relieve distress is to obtain an allotment of money which is to be spent by his district engineer under arbitrary rules framed at head-quarters, what scope has he for applying his economy?

It is casting no imputation upon engineers to say that their special education and training does not necessarily develop administrative capacity.

The persons most competent to construct a bridge or railway are not necessarily the most competent to decide whether or when it should be constructed.

The relations between collectors and district engineers are at present very far from satisfactory, in consequence of the whole administrative control, both of products and funds, being practically in the hands of the Public Works Department, while, nominally, the district engineer is held to be the collector's subordinate.

If the scheme of decentralisation which I have suggested could be carried out, and the district engineer be relieved of all nominal responsibility to the collector in provincial matters, while remaining his real subordinate and assistant in district matters, I am confident that both collectors and district engineers would be well pleased, and the interests of the public would be far better served.

Mr. Adams.—Owing to the want of a carefully prepared scheme of work, including completed estimates of projects which had been carefully considered, there has been some difficulty in employing the people in the manner which would have been financially most satisfactory.

The relief this year, however, has been on so small a scale that the difficulty has been little felt; but from the records it appears that it affected the relief in 1868–69, the result being the execution of works of little utility in comparison to their cost—a result which would have been avoided if a proper scheme of work had then been in existence.

Mr. Watts.—We found no difficulty here whatever, as the work of the Farukhabad and Cawnpore Light Railway more than provided for all our wants. Work still remains available on this line, in case of future distress, and we have also two large projects, one the Fatehgarh branch of the Ganges Canal and the other the rectification of the Kali nadi. I am not sufficiently acquainted with the circumstances of other districts to say whether any practical difficulty was experienced there or not. I have no other suggestion to make; all that appears to me necessary is (*a*) that projects should be prepared and *provisionally* approved of beforehand; (*b*) that district officers should have immediate sanction given on application to put them into execution; (*c*) that works shall be arranged at fitting centres of a district if they do not traverse it throughout.

Mr. Kennedy.—There has been no difficulty in finding suitable relief-works in this district, chiefly because the expenditure on original works had long been kept down to a minimum. The number of relief-works proposed has not been materially increased since the commencement, and the number of suitable schemes is undoubtedly limited; the total number of works proposed since the commencement is 14.

It would be difficult to add largely to this number. Only three other local earthworks of magnitude have occurred to me.

Mr. Sandys.—There has been no such difficulty in this district. The total number of relief works sanctioned up to date has been 17; of these 10 have been entirely completed and two are now in course of construction. The really useful works now left, and which are suitable for relief-works, are so few in this district that all able-bodied labourers should be transferred to other districts as soon as possible, and only the inefficient gangs given employment in this district. I doubt if sufficient employment for even the latter could now be found on useful works if the distress continued for more than one year.

CH IV. QN. 11.

NORTH-WESTERN PROVINCES.

Mr. Sells.—In this district there has been no difficulty in finding suitable relief works during the past scarcity. But the pressure was here very slight indeed, and no inference can be drawn as to what might have been the case had the brief scarcity developed into long continued famine.

BENGAL.

Colonel Cadell.—During the last famine there was no practical difficulty in finding suitable relief-works, and no difficulty is likely to be experienced for some years to come. The local requirements are, however, being rapidly met, and difficulty may arise hereafter when the chief wants of the various districts have been attended to.

There is still, however, much to be done in the way of improved communications, &c. Projects for light railways might be prepared in advance for lines which might eventually be undertaken.

The Provincial Public Works Department might prepare projects in advance for drainage embankments and river improvements, and each district committee should have projects prepared in advance for works of utility which they propose eventually to undertake.

If this were done, there would be in a time of scarcity no hurry, no confusion, and no delay in affording relief to the suffering population.

BOMBAY.

BOMBAY.

Colonel Anderson.—I have not heard of any practical difficulty in providing useful work during the late famine. Opinions, of course, differ as to what is most useful, and this difference of opinion is of course apt to run by departments, each thinking their own line the most useful, irrigation officers advocating irrigation works, road engineers roads, &c. But the month or two before famine commences, if properly made use of, should suffice to dispose of all these differences of opinion.

In anticipation of possible need, a forecast of the most useful works required in each collectorate for the following two or three years should always be made and then reviewed by superior authority some months before any prospect of their being required occurs.

Mr. Propert.—There has been no difficulty, as regards Khandesh, in finding suitable works during the recent pressure. Some schemes were ready to hand, having been sanctioned as ordinary works in past years. Others were carefully prepared, and at the present time, in roads and tanks alone, we have a sufficient number of schemes to employ any number of labourers for at least a year or two. Nine relief-works out of 10 must surely consist of roads or tanks, or works in connection with such. A tank is, I think, the most convenient sort of work for relief purposes, inasmuch as earthwork alone will suffice to complete the project. Roads are also good; but unless Government are prepared to sanction expenditure on metal and masonry work as well as embankments, road projects carried out by relief gangs will never be of any permanent use. At ordinary times local funds cannot afford to complete long lines of communication, the commencement of which has been forced upon the district by sheer famine. It is, I think, a mistake to suppose that metalling and the construction of small culverts (I mean those actually necessary for traffic) will not employ relief labourers. All masons require coolies to help them, while stone-breaking or moorum-digging afford the means of exacting really hard labour. At any rate some attention should be paid to the completion or partial completion of works before fresh ground is broken, in order to ensure their utility hereafter. Large bridges should of course be not thought of.

Mr. Moore.—When projects were ready, such as those in the Mán and Khutau talukas, there was no difficulty whatever. In Khanapur and Tasgaon, the other two bad talukas, there was a difficulty because no projects had been framed. In Khanapur we had to resort to the improvement of the Karad Bijapur road, and in Tasgaon we put the people to work on the improvement of town roads.

MADRAS.

MADRAS.

Lieut.-Colonel Mullins.—There was great practical difficulty in finding suitable relief-works in most of the afflicted districts, and very little could be done to solve the difficulty, owing to the absence of preparation beforehand and the want of the requisite time and staff when the scarcity and distress had set in. The Public Works Department had very little to do with the famine until towards the end of 1877, and though the chief engineers were from time to time consulted as to what works were available in the several districts, the relief-works were, for the most part, under the Revenue officers, and the Public Works Establishments aided them by hurriedly estimating for laying out, and in some cases measuring, works. About a year after the commencement of the famine the Public Works Establishments were greatly strengthened, the system was changed, and the execution of relief-works was entrusted to them. Several projects were then taken up for investigation, and a few of these have been used for relief purposes, while others were not ready until the distress in their neighbourhood had subsided.

Major Montgomerie.—The principal difficulty in finding suitable irrigation schemes for relief-works was owing to the incomplete state of the investigation of most of the projects within the affected areas, and the want of the necessary establishment to complete them.

If schemes of irrigation are to be provided, they must be prepared beforehand by the Public Works Department; but this will not be satisfactorily accomplished until the irrigation branch is separated from the general branch, or the present strength of the department materially increased, as explained in answer to Question No. 2.

Colonel Foord.—There has not been much difficulty in finding relief-works during the recent pressure, but possibly they were not all suitable and useful works, for under no circumstances can it be proper to make a road that is not wanted or that it will not be possible to keep up after it has been made. There should not be any difficulty whatever in future, if care is taken to have always ready in each district a

programme of usual works two or three years in advance of ordinary annual requirements. The wants of a district in the matter of public works have been described by the Government of India as "practically quite unlimited and illimitable."

The chief engineer does not suppose that a famine, such as that which has lately visited the Madras Presidency can be coped with by the agency of the Public Works Department alone, but he believes that, so far as that agency is employed, it should be on works of the usual kind, sanctioned in accordance with the rules of the department, and carried out in accordance with the usual practice of the department.

Mr. Price.—There was most certainly in the Cuddapah district, and I believe everywhere else, great practical difficulty in finding suitable relief-works during the famine. This existed all through the district, and arose from the distress having found us unprepared and from the rapid flocking in of paupers requiring aid. I do not think that there can be much doubt as to the plan by which to meet the difficulty touching works during any future famine.

The proper course, in my opinion, is to employ a staff of engineers totally separate from that working districts in ordinary times, and to cause them, as soon as practicable, to go through each district, searching for, and examining, all projects, no matter of what kind, which might be of use to the State or the people, and to make estimates and plans for these, which should be sent up for sanction as works to be kept in reserve for a famine; and such of these as are approved and passed should be bundled in three parcels for each district, marked "beginning," "severe pressure," and "decline." How these should be arranged is a matter which might very easily be settled by the officers of the Public Works Department and the

Mr. Wilkinson.—A very great difficulty was experienced in finding suitable relief-works during the recent famine in the sub-division of Salem. New roads were not wanted, and the Local Fund Board being bankrupt, it was in one sense useless to construct new roads as they were not likely to be maintained. Such, however, was the pressure that a few were undertaken.

A large number of wells and guntahs were cleared of silt, and improvements were effected to village-sites; but such works as these are, in my opinion, more suited to the last than to the first days of famine. Such works also provide employment for but a very small number of people.

From the very first I urged the necessity of some large work or works being undertaken under adequate supervision, and named several for which plans and estimates had long before been prepared; but sanction was not awarded.

A large number of irrigation works were in need of repair, and the civil officers were forced to undertake the quasi-repair of some of these works. The Department Public Works were under-officered, and had their hands full of work, and could render no assistance. Frequent applications for overseers and maistries received no attention, and the work which was done was, in consequence, in a great number of cases, of very little value. It is useless to expect tahsildars and village officers to carry out repairs to works of irrigation, unless they are efficiently supervised. During the recent famine effective supervision was up to October impossible, on account of the want of officers. I had up to March 1877 the famine administration of three taluks, with an area of 2,499 square miles and a population of 546,000. After March I had only two taluks, with an area of 1,745 square miles and a population of 360,657. I had no assistant at all till January 1877, when Major Baynes joined at Dharmapuri, and in February a covenanted assistant, who joined the service in December 1876, was posted to Krishnagiri. I had the revenue and magisterial and local fund administration of the whole sub-division, had to supervise the proceedings of, and hear appeals from, ten sub-magistrates, and yet was supposed to be able to inspect several hundreds of petty works, to see that proper work was done, that the coolies were properly paid, that the nominal rolls were correct, and that vouchers were forthcoming, as well as to visit each village to see that all who were in need of gratuitous relief obtained it, &c. It may be imagined how little time I had at my disposal to find out suitable relief-works.

These remarks will, I think, show that the main difficulty in the sub-division of Salem was the want of efficient supervision. Given this and the cordial co-operation of the Public Works Department, it would not have been difficult to provide relief-works for all who needed it.

Mr. O'Shaughnessy.—The Public Works Department experienced no difficulty in this district in giving suitable work to all persons seeking work as a means of relief during this famine. Its difficulty was entirely in the opposite direction. The ordinary works of the district were at a standstill, and the ordinary establishment was standing by idle for want of labour, while lakhs of rupees were being wasted on "civil-agency" works, some of which could well be deferred, some of which will probably be never completed, and some of which are of no earthly use whatever. This is no doubt attributable more to the system prescribed for famine relief than to the officers who conducted civil-agency works The collector was held to be responsible that no one died of starvation, even when people in danger of death from starvation refused to accept relief at any distance from their homes. The people became impressed with this quasi-acknowledged responsibility, and they acted upon it.

Heads of villages fostered the impression, and encouraged the distressed in refusing relief at a distance, and to resist removal to a distance from their homes, with the object no doubt of retaining the distribution of relief in their own hands, or of getting some work done in which they had a personal interest. Exaggerated reports of distress were then circulated, and exaggerated descriptions of useful and necessary works said to be available in almost every village for the employment of the distressed were then reported. It is supposed that these reports were often supported by the authority of tahsildars, and the collector was, in a measure, forced to sanction proceedings which he probably knew to be extremely wasteful and wrong.

The most complete scheme of famine-relief works would be utterly useless under such a system; and until the responsibility of Government to save life from starvation, except at appointed places, and under prescribed conditions, is ignored, it will be a waste of time to prepare schemes of works for famine relief. A man who sits starving at his door, and forces his family to remain starving in his house, sooner than go to where he and his family are offered relief, seems, in a common-sense view of the matter, to render himself liable to the same legal restrictions or punishment that he would be liable to if he attempted suicide and murder; but it appears that this is not the case. Some even say it would be a cruel application of law to force a man to save his life by relief offered at a distance from his home. There are indications, however, that Government are accepting the common-sense view of the matter, and it is to be hoped that this view will be authoritatively acknowledged before the occurrence of another famine. There has been no difficulty in providing relief-works, and if it is left with the Public Works Department to provide relief-works no difficulty need be anticipated hereafter. It will, of course, rest with Government to decide whether these works are to be utilised for famine relief, or whether the distressed persons, the heads of villages, and subordinate officers of Government can, in their personal interests, in a manner, force schemes of their own for adoption by civil officers. These difficulties

Ch. IV. Qn. 11.
MADRAS.

have been observed by Government, and they have been, for some time during this famine, to a great extent, removed by orders which define the duties of civil and public works officers, and by which civil officers are held responsible for the selection of fit objects for relief, while public-works officers are held responsible to give them suitable employment on works approved and sanctioned by competent authority.

P.S.—The number of people employed in ordinary years on all public works in Nellore is between 4,000 and 5,000.

Major Mead.—There has been no difficulty whatever in finding works, but there has been difficulty in making them available for relief purposes, owing to the absence of previously prepared designs and of anything like a sufficiency of members of all ranks of the Public Works Department, especially of competent overseers. The way to avoid this difficulty in future has been indicated in the answers to previous questions.

Lieut.-Colonel Prendergast.—I have heard that there was great practical difficulty in providing suitable relief-works during the recent pressure, in Bellary, for instance, and Kurnool. Projects were not prepared, and, in poor districts of great extent and somewhat thinly populated, it was a very arduous task to provide advantageous work for a large number of starving people. I have, however, no experience of my own regarding these districts. To provide in future for this difficulty, there must be estimates held in reserve; but the whole burden should not be thrown on the Public Works Department. A great deal of useful work was done in the past famine by the Revenue Department, and when a time of distress is coming on, but not yet fully developed, minor works that require no professional superintendence may with advantage be carried on by the revenue officers. The staff of the Public Works Department is small and not elastic; if it has to be suddenly increased for an emergency, fresh hands, without practical experience, must be brought in. The permanent professional subordinates should be kept to professional duties, and not have the sole charge of minor works, which can be carried out by the revenue subordinates with not more than casual advice and assistance from the professional department. In the North Arcot district a great deal of work was done that will benefit the country for years to come in clearing out the wells and village ponds, which are very numerous. This kind of work and the clearance of river-channels and spring-channels, as well as the collection of materials for road repairs, can be done without being put in the charge of the Public Works Department. These works, too, are particularly well adapted as preliminary measures of relief; they are found all over a district, and work can be put in hand by the revenue subordinates throughout each taluk at very short notice. All that is required can in this way be done to remove the danger of the population being left without proper relief until the larger works of relief are brought into execution. A great deal has been done in the recent famine in the way of road-works, new roads, in improvements to existing roads, and collecting material. A scheme may be drawn up and kept in hand to provide for a time of distress. Thus, for every taluk some additional roads and links between villages and the roads may be proposed, and approximate estimates made for the formation and for gravelling and metalling in fractions of a mile; also for road-dams, tunnels according to length, and the cross sections of nullahs and channels. It will take some time to have any comprehensive scheme matured, and the chief difficulty is in giving the extra work for its preparation to the public-works subordinates who have so much besides on their hands.

Major Vibart.—I believe there was great difficulty in many parts of Madras in finding suitable relief-works. The only suggestions that I can make on the subject of providing relief-works is for the Government to insist on plans and estimates being prepared for famine works to be worked out as soon as possible in every district, and for that purpose to provide each district with a special surveying staff for the purpose. I feel sure that until these required surveyors are made available nothing worth mentioning will be done. The present establishment of executives and assistants is too small, and they cannot efficiently get through the current work of their districts. The number of executive and assistant engineers in the Madras Presidency should be largely increased; and I think if the executive engineer of a division were relieved of direct personal charge of a range, he would be enabled to do far more good to the district he is attached to, both in the direction of new projects and also in the way of administrative reform, than at present, when his time is or will be frittered away in measuring up petty works, for the Examiner of Public Works Accounts requires completion certificates, and, without careful inspection and measurement, how can these be given?

Mr. Traill.—There has been difficulty found in providing suitable large works for relief-labour in this district. Nobody was ever allowed to starve for want of work, however. Large stores of metal and gravel have been collected and broken, and, in the event of another famine, the spreading of these would form a useful and large work. Under ordinary circumstances, it will be very many years before the supply now stored can be utilised, and it would have been more economical if the metal, &c. had been spread as it was collected. I have already suggested in my answer to Question 3 what I consider would be the most appropriate works to take up in the event of another famine.

IRRIGATION WORKS.

Ch IV Qn. 12.

QUESTION 12.—STATISTICS OF IRRIGATION.

What is the capital expended to date in the construction of the principal canals in your province, and what the yearly interest on that capital? What is the annual cost of maintenance? What is the present acreage irrigated? From this calculate the several corresponding rates per acre. What is the average local value per acre of the chief crops raised by irrigation from these canals? What is the difference between this and the average value of such crops raised without irrigation?

LIBRARY

FINANCIAL RESULTS of IRRIGATION and NAVIGATION WORKS in the PROVINCES of RAJPOOTANA, BENGAL, NORTH-WESTERN PROVINCES, PUNJAB, and BOMBAY, prepared in the OFFICE of the INSPECTOR GENERAL of IRRIGATION.

NAME OF CANALS, &c.	Total Capital Cost up to end of 1877-78.	Gross Earnings Direct and Indirect during 1877-78.	Maintenance Charges during 1877-78.	Net Profits Direct and Indirect.	Percentage of Net Profits on Total Capital Cost.	Acres Irrigated during 1877-78.	Receipts from Water Rates during 1877-78.	Total Net Earnings from beginning to end of 1877-78.	Total Accrued Interest from beginning to end of 1877-78.	Difference, Surplus, or Loss.	REMARKS.
RAJPUTANA.	£	£	£	£	£	No.	£	£	£	£	
Tanks in Ajmere Sub-Collectorate	40,184	3,286	1,848	1,438	3·58	3,047	9	18,427	*	—	
„ Beawur „	17,263	2,118	3,588	−1,470	−8·51	2,719	—	−2,660	*	—	
„ Todgurh „	10,501	1,008	1,924	−917	−8·65	156	22	726	*	—	The Capital and Revenue Accounts of these works have just been completed, and are subject to revision. All ordinary.
Bheer Reservoir	19,813	237	93	144	0·73		236	−95	2,801	−2,897	
Bulad „	8,323	246	234	11	0·13	—	236	−162	793	−955	
Jalea „	27,257	—	—	—	—	—	—	—	—	—	
Rajoshee „	3,882	50	29	21	0·53	—	44	−23	363	−386	
Muckrera „	3,176	—	—	—	—	—	—	—	—	—	
Ladpura „	2,537	—	—	—	—	—	—	—	—	—	
Total	133,026	6,945	7,716	+ 1,614 − 2,387		5,922	547	+19,153 −2,949	3,957	−4,238	
BENGAL.											
Orissa Project	1,778,090	16,111	21,607	−5,497	−0·30	98,495	11,782	−102,403	521,079	−623,482	P. P. W.
Midnapore Series	705,177	17,010	20,381	−3,372	−0·48	19,819	5,348	−25,540	213,774	−239,322	Do
Tidal „	178,301	6,228	3,056	3,175	1·78	—	—	4,844	60,590	−55,756	Do.
Sone Project	1,908,504	10,129	25,241	−15,112	−0·79	241,385	5,965	−34,206	359,331	−393,537	Do.
Tirhoot „	53,491	—	—	—	—	—	—	—	6,115	−6,115	In abeyance. Ordinary.
Hooghly „	14,296	—	—	—	—	—	—	—	1,932	−1,932	Do.
Total	4,637,859	49,478	70,285	+ 3,175 −23,981		359,699	23,095	+4,844 −162,158	1,162,830	−1,320,144	
NORTH-WESTERN PROVINCES.											
Ganges Canal	3,054,899	322,743	978,700	224,873	7·36	1,045,014	230,856	1,655,294	2,674,678	−1,019,384	P. P. W.
Eastern Jumna Canal	261,235	80,243	20,357	59,886	22·93	206,732	53,970	918,639	303,231	615,408	Ordinary.
Agra „	804,408	25,977	15,792	10,185	1·26	163,634	19,393	−1,008	184,011	−185,619	P. P. W.
Dun „	62,453	6,325	1,898	4,427	7·09	12,360	2,005	47,063	61,946	−14,884	Ordinary.
Rohilcund „	155,204	9,831	7,692	2,139	1·38	32,198	2,682	34,986	63,039	−28,054	Do.
Bundelcund Irrigation Works	8,262	491	375	116	1·40	1,400	269	−2,090	3,204	−5,294	Do.
Lower Ganges Canal	1,265,930	—	—	—	—	—	—	—	161,580	−161,580	Under construction. P. P. W.
Eastern „	27,052	—	—	—	—	—	—	—	8,893	−8,893	In abeyance.
Bundelcund Irrigation Survey	32,575	—	—	—	—	—	—	—	8,448	−8,448	Do.
Total	5,672,018	445,610	1,024,814	301,626		1,461,428	315,175	+2,655,982 −3,098	3,469,030	+615,408 −1,432,156	
PUNJAB.											
Western Jumna Canal	575,921	136,580	41,873	94,714	16·45	507,974	93,599	2,836,970	429,187	2,407,783	P. P. W.
Delhi and Goorgaon Irrigation Works.	18,341	431	490	−60	−0·32	2,098	324	34,243	24,310	9,933	Ordinary.
Baree Doab Canal (including Madhapur Workshops).	1,537,990	68,815	54,608	14,207	0·92	266,995	50,786	574,576	1,229,866	−655,290	P. P. W.
Lower Sutlej and Chenaub Inundation Canals.	10,800	32,058	16,962	15,097	139·67	284,680	68	354,114	8,101	346,013	Ordinary.
Upper Sutlej Inundation Canals	50,813	8,833	6,551	2,283	4·02	81,185	858	−9,092	41,415	−50,506	Do.
Indus Inundation Canals	57,747	15,132	25,337	−10,205	−17·67	175,960	—	36,991	32,211	4,781	Do.
Shapur and Sahiwal Canals	3,758	1,198	600	598	15·90	5,588	1,198	2,438	767	1,670	Do.
Sirhind Canal	1,598,627	—	—	—	—	—	—	—	185,591	−185,591	Under construction. P. P. W.
Surat „	31,174	—	—	—	—	—	—	—	2,572	−2,572	Do.
Derajat „ (Special *Survey*)	30,695	—	—	—	—	—	—	—	6,426	−6,426	
Lower Baree Doab Canal (Special *Survey*).	43,800	—	—	—	—	—	—	—	9,940	−9,940	In abeyance.
Abdool Rohim's Canal	3,510	—	—	—	—	—	—	—	369	−369	Ordinary.
Total	3,969,185	263,053	146,421	+126,899 −10,2[illegible]5		1,324,480	146,833	+3,839,332 −9,092	1,970,755	+2,770,180 −910,694	
BOMBAY.											
Kushmore and Bigari Bund	84,956	29	4,238	−4,209	−4·95	—	—	−8,542	10,583	−19,125	Ordinary.
Desert Canal (including Mucksooda).	55,072	5,750	2,104	3,586	6·44	44,112	—	24,357	11,088	12,370	Do.
Bigari Canal and Branches	109,318	9,608	6,983	2,625	2·40	63,179	43	113,694	45,982	67,713	P. P. W.
Kassimpur Bund (Roree District. Shikarpore Canal).	6,776	—	359	−359	−5·29	—	—	−458	475	−933	Ordinary.
Sukkur and Shadadpore Canal	122,422	2,597	4,312	−1,715	−1·40	61,898	11	−15,233	47,452	−62,685	P. P. W.
Eastern Narra Works	301,643	18,335	12,518	5,817	1·93	92,807	86	148,605	195,861	−47,256	(Partly) P. P. W
Ghar Canal and Branches	41,683	37,488	13,896	23,592	56·60	19,912	134	629,416	21,176	608,241	Ordinary.
Allibhur Cutcherry Canal	2,319	828	610	218	9·40	−222	43	−789	478	−1,267	Do.

* No interest being calculated for these tanks.

Name of Canals, &c.	Total Capital Cost up to end of 1877-78	Gross Earnings Direct and Indirect during 1877-78.	Maintenance Charges during 1877 78	Net Profits Direct and Indirect.	Percentage of Net Profits on Total Capital Cost.	Acres Irrigated during 1877 78.	Receipts from Water Rates during 1877 78.	Total Net Earnings from beginning to end of 1877 78.	Total Accrued Interest from beginning to end of 1877-78.	Difference, Surplus, or Loss.	Remarks.
Bombay—*continued.*	£	£	£	£	£	No.	£	£	£	£	
Marak Great Canal	17,099	5,802	1,673	4,130	24 15	1,678	189	12,230	3,317	8,913	Do.
Surfrazwah "	12,138	1,057	1,282	−224	−1·85	467	133	−674	2,759	−3,432	Do.
Fulch "	67,507	15,103	15,164	−62	−0·09	6,151	1,482	−14,157	76,165	−90,322	Do.
Pinyari Canal	1,687	7,688	4,946	2,742	162·57	543	61	2,872	200	2,672	Ordinary.
Hathmati "	48,175	354	477	−124	−0·25	104	337	−2,300	11,313	−13,613	P. P. W.
Khari Irrigation Sluices	7,551	2,656	321	2,334	30 91	625	—	3,816	3,522	34,593	Ordinary.
Hariola Tank	6,294	—	36	−36	−0·58	2	—	45	1,437	−1,393	Do.
Lower Panjra River Works	45,692	378	135	243	0·53	82	31	750	18,370	−17,611	P. P. W.
Jamda Canal	94,576	547	1,856	−1,309	−1·38	492	528	−9,784	46,953	−56,737	Ordinary.
Palkheer "	18,835	282	424	−142	−0·75	108	220	−662	6,112	−6,774	P. P. W.
Warali "	2,671	79	67	12	0 43	21	79	−346	1,346	−1,692	Ordinary.
Ojhar "	24,041	330	219	111	0 46	184	314	−78	5,366	−5,445	Do.
Lakh "	33,007	323	525	−202	−0·61	154	313	−5,560	14,973	−20,533	P. P. W.
Bhatori Tank	34,719	66	96	−30	−0·09	55	63	−370	11,741	−12,112	Ordinary.
Mutha Canal	525,488	13,357	3,645	9,712	1·85	536	1,065	16,662	132,889	115,807	P. P. W.
Kasurdi Tank	4,389	13	61	−48	−1·09	22	9	−478	2,096	−2,574	Ordinary.
Koregaum "	1,918	—	4	−4	−0·18	—	—	207	1,298	−1,631	Do.
Ekrook "	122,690	604	980	−377	−0 30	184	246	−10,448	45,269	−55,717	P. P. W.
Remari Canal	4,934	315	130	186	3 76	65	312	−598	3,024	−3,621	Ordinary.
Yerla "	33,412	46	75	−30	−0·09	25	45	−2,036	6,105	−8,142	Do.
Gondowli "	9,117	25	71	−45	−0·50	16	21	−807	3,339	−4,146	Do.
Maini Tank	32,606	104	173	−68	−0·21	98	101	−263	9,376	−9,638	Do.
Chickli Canal	5,456	68	60	8	0·15	21	64	−750	2,081	−2,832	
Krishna "	76,031	1,863	1,634	228	0 30	4,093	1,749	−6,526	38,490	−45,015	P. P. W.
Kalala Dam	2,970	—	2	−2	−0·08	—	—	−438	2,143	−2,581	Ordinary.
Madag Tank	21,998	213	351	−139	−0·63	550	212	−2,777	7 990	−10,767	Do.
Muswah "	10,546	—	—	—	—	—	—	—	972	−972	Do
Waghad "	126	—	—	—	—	—	—	—	1	−1	Do.
Motoha "	13,801	—	—	—	—	—	—	—	101	−101	Do.
Patus "	13	—	—	—	—	—	—	—	4	−4	Do.
Sirsaphall "	13,467	—	—	—	—	—	—	—	80	−80	Do.
Badalwadi "	279	—	—	—	—	—	—	—	1	−1	Do.
Nira Canal	34,548	—	—	—	—	—	—	—	3,467	−3,467	Do.
Ashti Tank	21,645	—	—	—	—	—	—	—	207	−207	Do
Pangaon "	6,151	—	—	—	—	—	—	—	24	−24	Do.
Pinjlee "	15,916	—	—	—	—	—	—	—	198	−198	Do.
Muswad "	22,594	—	—	—	—	—	—	—	332	−332	Do.
Neneree "	732	—	—	—	—	—	—	—	10	−10	Do.
Gokak Canal	8,886	—	—	—	—	—	—	—	35	−35	Do.
Dambal Tank	5,267	—	—	—	—	—	—	—	77	−77	Do.
Doni Reservoir	938	—	—	—	—	—	—	—	81	−81	Do.
Mannkop Tank	930	—	—	—	—	—	—	—	52	−52	Do.
Medleri "	3,023	—	—	—	—	—	—	—	33	−33	Do.
Guttprabha Survey	5,514	—	—	—	—	—	—	—	1,703	−1,703	Do.
Mullprabha "	1,655	—	—	—	—	—	—	—	641	−641	Do.
Eastern Delta "	1,862	—	—	—	—	—	—	—	171	171	Do.
Roree and Hyderabad Survey	7,677	—	—	—	—	—	—	—	3,684	−3,684	Do
Jambrow Canal "	3,816	—	—	—	—	—	—	—	689	−689	Do.
Sabarmutti Canal "	3,527	—	—	—	—	—	—	—	1,272	−1,272	
Tapti " "	19,793	—	—	—	—	—	—	—	5,946	−5,946	
Bhokar Tank	1,023	—	—	—	—	—	—	—	406	−406	
Bhima and Sina	3,650		—	—	—	—	—	—	1,264	−1,264	
Sind Canal	12 269			—	—	—	—	—	—	—	Accounts not completed.
Western Narra Works	12 028		—	—	—	—	—	—	—	—	Accounts not completed.
Total	2,211,475	125,908	70,487	+55,542 −9,125		+298,184 −222	7,891	+953,053 −84,074	818,120	+734,073 −644,171	

N.B.—P. P. W. means that the work is classed as a Productive Public Work on which loan funds have been expended.

NOTE.—The accounts of Irrigation Works in Madras and British Burmah have not been finally completed as yet; they are not, therefore, entered in this statemen A statement for Madras is given on page .

SUMMARY of the preceding STATEMENT.

—	Total Capital Cost up to end of 1877-78.	Gross Earnings Direct and Indirect during 1877-78.	Maintenance Charges during 1877-78.	Net Profits Direct and Indirect.	Percentage of Net Profits on Total Capital Cost.	Acres Irrigated during 1877-78.	Receipts from Water Rates during 1877-78.	Total Net Earnings from beginning to end of 1877-78.	Total Accrued Interest from beginning to end of 1877-78.	Difference, Surplus, or Loss.
	£	£	£	£	£	No.	£	£	£	£
Rajputana	133,026	6,945	7,716	+1,614 −2,387		5,922	547	+19,153 −2,940	3,957	−4,238
Bengal	4,637,859	40,478	70,285	+3,175 −23,981		359,099	23,005	+4,844 −162,158	1,162,830	−1,320,144
North-Western Provinces	5,672,018	445,610	1,024,814	301,626		1,461,428	315,175	+2,655,982 −3,698	3,469,030	+615,408 −1,432,156
Punjab	3,969,185	263,053	146,421	+126,899 −10,265		1,324,480	146,833	+3,839,332 −9,002	1,970,755	+2,770,180 −910,694
Bombay	2,211,475	125,908	79,487	+55,542 −9,125		+298,184 −222	7,891	+953,053 −84,074	813,120	+734,673 −644,171

An approximate Statement comparing the net Annual Revenue derived from the Eight principal Systems of Irrigation in the Madras Presidency with the Capital Outlay upon each to the End of the Official Year 1875–76, prepared in the Department of Public Works (Irrigation) Accounts.

Systems.	Capital Expenditure up to 31st March 1876.	Gross increased Revenue due to Irrigation to 31st March 1876.	Working Expenses to 31st March 1876.	Net Revenue.	Year from which increased Revenue is obtained.	Period to which increased Revenue refers.	Yearly Average net Revenue.	Per-centage of yearly Average Revenue on Capital Outlay.	Present Acreage irrigated.	Rate per Acre.	Remarks.
	Rs.	Rs.	Rs.	Rs.			Rs.		Acres.		
1. Chembrambakam tank.	5,26,819	62,172	71,069	8,897	1871-72	5 years.	1,179	·34	7,571	Unknown. The assessment is consolidated.	Improvements completed in 1870-71.
2. Godavari Delta system.	73,64,443	2,45,71,999	58,00,075	1,87,71,924	1847-48	29 "	6,47,308	8·79	525,398	2 15 1	Anicut completed in 1846-47.
3. Cauvery do.	13,48,900	2,14,63,455	47,86,180	1,66,77,275	1837-38	39 "	4,27,622	31·7	851,749	Unknown. The assessment is consolidated.	No reliance can be placed on this figure. Improvements completed in 1836-37.
4. Kistna do.	46,35,898	88,89,154	25,74,952	63,14,202	1855-56	21 "	3,00,676	6·49	264,256	2 15 10	Anicut completed in 1854-55.
5. Palar do.	12,57,922	13,88,104	1,87,627	12,00,477	1856-57	20 "	60,024	4·77	21,291	Unknown. The assessment is consolidated.	Do. in 1855-56.
6. Pelandorai do.	2,73,087	—	—	—	—	—	—	—	—		Anicut was only completed in 1876-77.
7. Pennar do.	13,40,201	1,06,314	*37,933	68,381	—	1 year.	68,381	5·1	54,102		Anicut completed in 1861-62.
8. Srivaikuntam do.	11,07,713	1,05,114	98,770	6,344	1871-72	5 years.	1,269	·12	30,019		Do. in 1869-70.

Information respecting revenue is as yet unknown to this office for the period subsequent to 1875-76. The outlay has, therefore, been entered to correspond. In the case of the Cauvery Delta system, revenue information being available only up to 1874-75, the outlay on that system has been shown accordingly.

* The exact working expenses of the Pennar anicut system are not available prior to 1875; the charge for the year 1875-76 and the corresponding revenue for that year only have been entered in consequence.

16th September 1878. (Signed) F. BEAUCLERK.

PUNJAB.

Capt. J. W. Ottley, R.E.

ANNUAL COST of MAINTENANCE for the 10 Years ending 1877–78 :—

Years.	Western Jumna Canal.	Bári Doáb Canal.	Upper Sutlej Inundation Canal.	Lower Sutlej and Chinab.	Indus.	Shahpur.
1868–69	2,41,077	3,65,585	60,312	1,60,956	1,10,063	—
1869–70	3,89,787	3,68,747	84,677	1,71,883	1,24,009	—
1870–71	3,38,729	4,23,371	91,742	1,88,185	1,17,374	4,139
1871–72	3,76,454	3,47,983	1,49,226	1,44,144	1,57,826	4,181
1872–73	4,01,178	3,15,702	1,56,206	1,63,623	1,80,464	4,339
1873–74	3,72,982	*6,72,523	1,17,034	1,63,993	1,58,059	4,187
1874–75	3,38,737	3,56,883	1,10,640	1,56,269	1,91,736	3,690
1875–76	3,75,158	5,02,401	1, 3,066	1,63,694	1,90,013	5,214
1876–77	6,89,373	5,68,399	78,358	1,55,640	2,13,963	5,778
1877–78	4,18,725	5,23,987	65,507	1,69,616	2,53,365	6,001
Total	36,42,140	44,45,581	10,26,768	16,38,003	16,96,872	37,529
Average Rs.	3,64,214	4,44,558	1,02,677	1,63,800	1,69,687	4,691

* Rs. 3,26,437 are due to the Madhopur workshops. Under the orders of the Government of India the working expenses of the Madhopur workshops from this date have been debited to the Bári Doáb Canal, but the shops have now been closed and are under liquidation.

The ACREAGE IRRIGATED in each year for the 10 Years ending 1877–78, and the Average Area in Acres deduced therefrom.

Years.	Western Jumna Canal	Bári Dáob Canal.	Upper Sutlej	Lower Sutlej and Chenab.	Indus.	Shapur.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1868–69	4,86,878	2,99,835	66,584	1,99,463	1,07,160	—
1869–70	4,96,542	2,33,927	1,48,796	2,43,093	1,29,177	—
1870–71	4,62,707	2,79,210	77,070	2,02,086	1,74,342	2,460
1871–72	4,44,385	2,87,070	87,043	1,88,465	1,44,334	4,113
1872–73	3,51,820	2,28,796	1,35,849	2,42,504	1,80,137	4,445
1873–74	3,11,747	2,32,146	65,238	1,97,064	1,63,020	4,080
1874–75	3,82,847	2,79,183	84,120	2,73,688	1,71,822	6,355
1875–76	3,09,595	2,14,599	1,38,937	2,77,883	1,44,960	4,041
1876–77	3,66,482	2,02,712	74,243	2,85,645	1,66,574	9,123
1877–78	5,07,974	2,66,995	81,185	2,84,680	1,71,604	5,588
Total -	41,20,977	25,25,103	9,58,560	23,94,521	15,53,130	40,205
Average -	4,12,098	2,52,510	95,856	2,39,452	1,55,313	5,025

Total average 1,160,254 acres.

Note.—The total area irrigated during 1877–78 (including the Delhi and Gurgaon Irrigation Works, which watered 2,098 acres) was 1,320,124 acres.

Rates per Acre of Capital expended and Cost of Maintenance.

Taking the acreage irrigated and the maintenance in 1877–78, and the total capital outlay up to the end of the same year, we arrive at the following results:—

On the Western Jumna Canal the capital was Rs. 11·5 per acre and the maintenance about 13 annas an acre.

On the Bári Doáb Canal the corresponding figures are Rs. 55·5 and nearly Rs. 2. These figures are, however, not really comparable either as to capital or maintenance. As regards capital, the Western Jumna Canal being partly an old native work, the capital shown is smaller than would be the case if the same work had to be executed at the present day. This canal, too, is a very long-established one, on which irrigation may be said to have attained very nearly its full growth. On the other hand, the irrigation on the Bári Doáb Canal is not yet fully extended, so that the capital falls at present on a smaller acreage than will eventually be the case; and further, owing to the physical difficulties of the country, as well as to the more recent period of its construction, the incidence of the outlay must necessarily, other things being equal, exceed that of the Western Jumna Canal.

Again, as regards maintenance, this item, as well as its incidence, must vary greatly from year to year according as more or less extensive repairs are executed, and as the season is favourable to irrigation or otherwise; but from a comparison of the returns of a number of years, it may be said that, taking one year with another, the maintenance charges on a fully developed canal should average from 12 annas to one rupee per acre. The incidence of the capital will, of course, depend on the peculiar circumstances of each case; it might, perhaps, be put down as a very rough estimate at from Rs. 25 to Rs. 30 per acre for a canal without navigation. The maintenance charges and the acreage irrigated have been furnished above for the inundation canals as well as for the permanent canals; but, as all these inundation canals are worked on different systems, which are often the merest modifications of those which prevailed when the Punjab was under native rule, it will be understood that no advantage would be derived from a comparison of their capital accounts, as shown by this department, with similar statistics of canals which have been mainly or entirely constructed by the British Government since the annexation. The same remark applies, but with even greater force, to any comparison of the maintenance charges which on inundation canals are, in many cases, merely nominal, the necessary work being performed as part of the duties of the irrigators under the land settlement.

Average Local Value per Acre of the chief Crops raised by Irrigation from the Canals in question.

The information given in the following table is obtained from the returns published in the Revenue reports, and are obtained yearly from the district officers. No opinion can be formed in this office as to the amount of reliance which may be placed on them:—

	Western Jumna Canal Average of 8 Years.	Bári Doáb Canal Average of 10 Years.
	Rs.	Rs.
Sugar-cane	106·28 per acre.	82·25 per acre.
Cotton - -	41·39 „	40·57 „
Jowár - -	18·65 „	21 47 „
Rice - - -	60·74 „	42·78 „
Wheat - -	37 16 „	31·41 „
Barley - - -	26 13 „	17·28 „
Indigo - -	169·56 „	not grown
Gram - - -	18 61 „	24·58 „

Amount per Acre paid for the use of Water for the chief Crops by the Occupier in the shape of water-rate.

	Western Jumna Canal.	Bári Doáb Canal.	Upper Sutlej Inundation Canals.
	Rs.	Rs.	Rs.
Sugar-cane - -	5 per acre	6 per acre.	1 12 0
Cotton - -	2 2 0	2 8 0	2 0 0
Jowár - - -	1 10 8	1 8 0	1 8 0
Rice - -	3 0 0	4 12 0	3 0 0
Wheat - - -	2 4 0	2 8 0	0 12 0
Barley - -	2 4 0	2 8 0	0 12 0
Indigo -	2 4 0	2 8 0	1 4 0
Gram - -	2 4 0	0 12 0	1 4 0

The above rates are those charged for flow irrigation. When the water is lifted on to the fields the charge made is ⅔rds on the Western Jumna Canal and ½ on the Bári Doáb and Upper Sutlej Inundation Canals of the above flow rates. The great divergence of rates noticeable on the Upper Sutlej Inundation Canals is due to the fact that the number of waterings

necessary from wells to supplement the inundation irrigation had to be taken into account. Thus rice, cotton, gram, and jowar can be usually matured by the canal water alone, which, in the case of wheat, barley, and sugar-cane, requires to be supplemented by wells.

Mr. Roe.—The canals referred to in the following replies are the inundation canals of the Mooltan district. They are 36 in number; viz., 19 from the Sutlej and 17 from the Chenab. They are cuts from the rivers, varying from 3 or 4 to 50 miles in length, with a breadth of from 4 to 30 feet. The total length of the main channels is about 650 miles. The first Chenab canal leaves the river about 20 miles to the north of Mooltan; the head of the first Sutlej canal is about 80 miles above the junction of the two rivers. None of the canals run at a great angle from the river, but they all strike inland as far as the slope of the country will permit. They fill gradually as the river rises, beginning to work about the 15th April, being at their full in July, and ceasing about 15th September. If they continue to flow beyond this, the irrigation benefits the land for the ensuing rabbi. My experience of the canals has been obtained during the 5½ years I have been in charge of the settlement of this district.

The canals were all constructed under native rule, so there is no capital account. They are maintained by the "cher system;" every person taking canal water is liable for so many days' labour at the annual clearances of the canal from which he draws his supply. These persons are called "chers," and a full "cher" has to give 90 days' labour. For this he receives no pay. The irrigated area for which a "cher" has to be given varies on the different canals from 14 to 50 acres. According to the returns of the present settlement, the area irrigated is by canals alone:—

By Paggu (flow) - -	54,594	
By Jhilár (lift) - -	16,738 =	71,332
By wells aided by canals - -		2,63,236
Total - -		3,34,568

It is impossible to calculate acreage rates. The chief crops grown on canal lands are indigo, cotton, and sugar. These crops could not be grown at all (except a little cotton) without canal water. In the present settlement estimates the gross value of indigo per acre has been calculated at between Rs. 17 and Rs. 18; that of cotton about the same; sugar at between Rs. 52 and Rs. 53. If the rabbi crops, like wheat, get a good watering, their yield may be reckoned at from a maund to 2 maunds per acre heavier than when not so irrigated. But the general effect of the canal irrigation is rather to extend the area of cultivation than to increase the yield per acre.

Postscript to answers by Mr. C. Roe, Settlement Officer, Mooltan.

In my reply to the above question, by a "cher" is meant the labourer himself, and a "full cher" is a labourer who has to give the full quota of 90 days' work.

The number of chers, *i.e.*, full chers, necessary for the clearances was fixed for each canal by the settlement officer at the regular settlement. The total irrigation of the canal, divided by the number of chers, gives the number of acres which has to provide one full cher. This varied on each canal.

On the Sutlej canals the irrigated areaper cher varied from 14 to 32 acres, the average being 25 acres. A cultivator irrigating less than the standard of his canal, has to give so many days' less labour; *e.g.*, the standard is 25 acres. He cultivates 10 acres. He therefore has to give $\frac{2}{5} \times 90$ days = 36 days' labour; and he would generally be spoken of as giving two fifths, or 6 chittacks of a cher. Similarly, if he cultivates 50 acres, he would have to give two chers.

This standard, however, varies annually; for the number of chers fixed at settlement is always called out. It is distributed over the different villages by munsiffs, and inside the villages by lambardárs. But the canal officers keep, as a check on this distribution, the measurements of the irrigation of the preceding year; and it is on this that the chers are practically assessed. For instance, for the Matithal canal, 90 chers were fixed. The irrigated area was 1,800 acres, which gave the standard of 20 acres per cher. If in any year the irrigation doubled, only the 90 chers would still be called out, and the standard for that year would be 40 acres per cher; and, similarly, if the irrigated area were only 9,000 acres, every 10 acres would then have to give a full cher.

Mr. E. O'Brien.—No statistics exist of the capital expended on, or of the interest on, the capital.

The annual cost of maintenance is as follows:—

	Rs.
3,00,000 labourers working one day each, at 6 annas per day - - - -	1,12,500
Pay of establishment, and fines on absentee labourers -	24,771
Total -	1,37,271

The area irrigated when the settlement measurements were made in 1874–75 was 200,081 acres. No statistics before or after that year exist.

It is not understood what the "corresponding rates per acre" mean. In this district, every kind of irrigation, whether flow or lift, superior crops or inferior crops, requiring many waterings or few, contribute uniformly their quota of labour and of the payment of establishment. The amount of that quota depended hitherto on the amount of land revenue paid by the land irrigated. Under recent orders of Government, the cost of maintenance is to be distributed over the area irrigated.

The rate per acre which irrigation costs the agriculturalist is Rs. 1,37,271 ÷ 2,09,081 acres = Rs. 0,10,6 acre. In this district, the only unirrigated lands are the river sailába lands. The rainfall is so small that no crops can be grown from rain alone. Irrigated land here is that which grows two crops in the year—1, a kharíf crop, irrigated by inundation canals; 2, a rabbi crop, the land for which is softened for ploughing, and the seed is sown by canal water, and the crop is matured in the cold season by irrigation from wells. Unirrigated, *i.e.*, sailába land, grows only one, *i.e.*, the rabbi crop. Therefore, a comparison can only be made between an acre of unirrigated land bearing one crop, and an acre of irrigated land bearing two crops in the year. An acre of unirrigated land will produce 8 maunds of wheat, equal in value, at 27 seers 10 chittaks per rupee, to *Rs. 11-9-4.

An acre of irrigated land will produce 10 maunds of wheat, in value, at 27 seers 10 chittaks per rupee, to *Rs. 14-7-8, plus 5 maunds of cotton, equal in value, at 11 seers 1 chittak per rupee, to Rs. 18-1-3.*

The local value per acre of these crops will be Rs. 11-9-4 per acre for unirrigated land, and Rs. 32-11-11 for irrigated land.

Wheat has been chosen because it is the crop most grown, and cotton, as being equally placed in relative value to sugar, indigo, and vegetables on the one hand, and rice, jowár, and bájra on the other.

Major E. C. Corbyn.—The capital expended to date on the construction of the principal Government canals (noted below) of the Shahpur district is Rs. 85,500, and the yearly interest on the capital, at Rs. 4½ per cent., is Rs. 3,847-8. The annual cost of maintenance is Rs. 14,500. The present acreage irrigated is 21,500 acres. The average local value per acre of the chief crops raised by irrigation from these canals is, wheat, Rs. 20, and bájra, Rs. 16. The difference between this and the average value of such crops raised without irrigation is, wheat, Rs. 14, and bájra, Rs. 10.

CH. IV. QN. 12.

PUNJAB.

Name of Canals.	Capital expended in Construction.	Interest on Capital, @ Rs 4½ per cent.	Annual Cost of Maintenance.
	Rs.	Rs.	Rs
Civil Station Canal -	37,000	1,665	6,500
Sáhiwàl „ -	3,000	135	1,000
Mr. Macnabb's „ -	7,000	315	500
Raniwah „ -	28,500	1,282-8	5,000
Corbynwah „	10,000	450	1,500
Total -	85,000	3,847-8	14,500

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Mr. C. C. Anderson.—(5.) The average value per acre in 1876–77 of crops raised by canal irrigation was—

Gardens -	66·00	Grain -	17·79
Sugar-cane -	66·09	Peas -	15·09
Wheat -	25·00	Fodder -	12·00
Barley -	14·50	Cotton -	14·59
Rice -	32·00	Indigo -	15·00
Maize -	15·50	Opium -	32·00
Joar -	14·69		

The average value of similar crops unirrigated is not known. Sugar-cane, wheat, rice, indigo, as a rule, cannot be raised except by irrigation.

Board of Revenue.—The chief crops raised by irrigation from the canals (excluding garden produce and water-nuts) are sugar-cane, opium, indigo, and rice (which are only in very few tracts grown without irrigation), wheat, barley, gram (which sown by itself is rarely watered). The average value per acre of these crops, watered from the canals, taken from the figures given at page 14 of the Irrigation Revenue Report for 1876–77 are (the figures in the upper line showing the value, in the lower, the acreage of the crop)—

		Per acre. Rs.
Sugar-cane -	$\left(\frac{85,67,020}{129,607} =\right)$	66·1
Opium -	$\left(\frac{3,78,328}{11,729} =\right)$	32
Indigo -	$\left(\frac{22,28,835}{148,589} =\right)$	15
Rice -	$\left(\frac{27,11,808}{84,744} =\right)$	=32
And Cotton -	$\left(\frac{12,14,910}{40,497} =\right)$	
Wheat -	$\left(\frac{1,33,07,875}{532,315} =\right)$	25
Barley -	$\left(\frac{23,27,714}{160,532} =\right)$	14·4
Gram -	$\left(\frac{3,09,844}{17,407} =\right)$	18 nearly.

The average *local* value per acre of the respective crops raised with and without irrigation (excluding those which are never or hardly ever unirrigated) in some of the canal-irrigated districts are :—

Crop.	Value of crop per acre. Cawnpore. Irrigated.	Unirrigated.
Wheat -	28	12
Bajra -	18	10

BENGAL.

BENGAL.

Colonel Haig.—The following statement shows—

(1.) The capital expended to end of 1877–78 in the construction of the principal canals in Bengal;

(2.) The yearly interest on that capital; and

(3.) The annual cost of maintenance.

The "cost per acre now irrigated" has absolutely no meaning whatever, as the greater part of the expenditure on the really costly works has been already incurred, while, for want of a small additional outlay on the distributaries, only a fraction of the area commanded by the main canals is actually irrigable. The return is, however, given as asked for.

—	Capital Outlay to End of 1877–78.	Annual Interest on Capital Outlay at 4½ per cent.	Average annual Cost of Maintenance for the last Four Years.	Area irrigated in 1877–78. Khurreef.	Rubbee.	Perennial.	Total.	Rate per Acre now irrigated. Capital Outlay.	Interest.	Maintenance.	Remarks.
ORISSA PROJECT.	Rs	Rs	Rs.	Acres.	Acres.	Acres.	Acres.	Rs.	Rs	Rs	
Mahanuddy Series - -	1,45,42,808	6,54,426	2,08,694	85,000	4,495	253	89,748	162	7 3	2 3	
Brahmnee and Byturnee Series - - - -	32,07,972	1,44,359	—	—	—	—	—	—	—	—	Not yet opened
Midnapore Canal - -	70,51,773	3,17,330	1,68,220	19,775	674	—	20,449	344·8	15 5	8 2	
Hidgellee Tidal Canal -	17,72,699	79,771	20,141	—	—	—	—	—	—	—	For navigation only.
SONE PROJECT.											
Western Main Canal Series	1,21,92,222	5,48,650	1,19,577	83,804	1,29,012	9,690	2,24,506	54 3	2 4	0·5	
Eastern „ „ -	68,75,943	3,09,417	69,567	64,090	—	—	64,090	107 3	4·8	1·8	
Tirhoot Project - -	5,34,907	24,071	—	Projects either abandoned or in abeyance.							
Hooghly - - -	1,42,808	6,426	—								
Damoodur - - -	1,59,502	7,177	—								
	4,04,80,634	20,91,627	5,95,208	2,54,669	1,34,181	9,943	3,98,793				

The rate per acre now irrigated is here calculated upon the areas irrigated in 1876–77, but these areas vary largely from year to year. That under the Midnapore canal was 70,000 acres a few years ago, and is 60,000 acres in 1878–79. All the projects are unfinished, and only partially in operation.

BOMBAY.

Mr. Hughes.—Excluding outlay on improvements to two old works, the revenue accounts of which are incomplete, the total capital outlay on 20 new works of irrigation in operation or partial operation was at the end of the year 1876–77 Rs. 1,14,95,077, made up as follows:—

A.—Direct Charges.

	Rs.
Works - - - -	83,87,081
Establishment - -	17,52,614
Tools - - - -	1,72,005
	1,03,11,700
Add—Suspense account -	1,174
	1,03,12,874
Deduct—Receipts on capital -	12,538
Total A, direct charges -	1,03,00,336

B.—Indirect Charges.

Capitalisation - -	1,99,611
Interest - - - -	9,95,130
Total B, indirect charges	11,94,741
Total A + B -	1,14,95,077

These figures include outlay on the water works of Poona cantonment and civil station, which form part of the Mutha irrigation scheme. Deducting on this account Rs. 6,75,636, the estimated proportionate cost of the water works, the total capital outlay on irrigation works to the end of 1876–77 is Rs. 1,08,19,441.

The yearly interest on this outlay at 4½ per cent. is Rs. 4,86,875.

The cost of maintenance during 1876–77, excluding maintenance of Poona water supply, was Rs. 78,253, as follows:—

	Rs.
Works - - -	1,739
Repairs - - -	37,660
Share of general irrigation establishment.	38,291
Tools - - -	563
Total in P. W. D. -	78,253

The acreage irrigated during 1877–78 was 24,389 acres.

The several corresponding rates per acre irrigated are:—

	Rs.
Capital outlay - -	444
Annual interest - -	20
Maintenance charges -	3·21

It should be stated that these rates are most misleading, because the bulk of the outlay is on works which have only very recently come into operation and on which the people have had no opportunity of becoming practised in irrigation or of experiencing its advantages. Also the capital outlay on works in partial operation invariably comprises the heavier portions of the work. For instance, taking the whole outlay to the end of 1876-77 as 108 lakhs, nearly 40 per cent. or 43 lakhs has been incurred on the Mutha canals, which are designed to command 93,381 acres. The entire estimated cost of this work is 56 lakhs; the area under command of the completed portion to the end of 1876–77 was 20,955 acres; thus, for an outlay of about ⅘ the total estimate, the area brought within reach of the water is less than ¼ of what it will be when the work is completed; the reason of this is, that the outlay to date comprises, besides the whole cost of the large reservoir which is to supply the entire project, the cost of several miles of canal in an incomplete state, beyond the point to which water had been admitted.

This explanation is similar to that given in para. 23, Part I. of the annual Revenue Report attached, which also contains information as to the cost of the works per acre under command. This varies from 11 to 53 Rupees per acre; and assuming that ultimately ⅓ of the area under command will be irrigated annually, the outlay per acre irrigated will be from 33 to 159 Rs.

Colonel Anderson.—Apart from canals under the Irrigation Department, minor irrigation from streams by means of dams constructed by the people themselves is very common. Tank irrigation is also very common in Dharwar. I should say that on the average the value of the crops below such works in the case of irrigation lasting up to February, and admitting of a second crop being taken, is not less than four times that of dry crops, and probably somewhat more. No general rate can be laid down, since irrigation differs much; in some cases it only lasts up to the close of the rains, and so on for different periods up to perennial irrigation, which alone allows the most lucrative crop, sugar-cane, to be grown.

Mr. Propert.—Tabular form will show capital expended, &c.

Capital Expenditure, including Establishment.	Yearly Interest.	Annual Cost of Maintenance.	Acreage Irrigation.	Several Corresponding Rates per Acre irrigated.		
				Capital.	Interest.	Maintenance.
Rs. 15,00,000	Rs. 67,500	Rs. 6 500	Rs. 5,950	Rs. 252	Rs. 11·26	Rs. 1·1

The above expenditure represents only the new irrigation schemes, for which capital accounts are kept. The old native pats or canals, bandharas or weirs, of which there are hundreds in the province, and from which a revenue of about Rs. 77,000 is derived, are left out of consideration at present.

The local value per acre of the chief irrigated crops, as given by Captain Elphinstone of the Khandesh Revenue Survey at the time of the last settlement, was as follows:—

Name of Crop.	Total Value per Acre.	Profit per Acre.
	Rs.	Rs.
Sugar-cane - - -	240	115
Plantains - - - -	62	36
Rice, best kind - - -	60	30
Vegetables - - - -	50	27
Gram - - - -	16	11
Wheat - - - - -	32	24
Jowari and bajri - - -	21	14

Ch IV. Qn. 12.

Bombay.

Of the above, the first four cannot be grown without irrigation; the mean value of the others is approximately as follows :—

—	Total Value per Acre.	Profit per Acre.
	Rs.	Rs
Gram - - - - - -	10	6
Wheat - - - - -	20	12
Bajri and jowari - -	10	6

Note.—I am not satisfied with the above figures, but cannot decide at present.

Madras

MADRAS.

Mr. Sullivan.—The answer to this question, so far as the Godavari, Kistna, Palar, Strivaiguntam, and Cauvery irrigation works are concerned, will be found in the financial abstracts forwarded to the Government of India by the Madras Government with their proceedings, under date 28th July 1876, No. 1923, Public Works Department. The information is succinctly tabulated below :—

Name of the Work. 1.	Capital Outlay on the Work up to 1874-75. 2.	Interest on the Capital at 4½ per cent. 3.	Working Expenses. 4.	Area Irrigated. 5.	Charge for Interest per Acre. 6.	Working Expenses per Acre. 7
	Rs.	Rs.	Rs.	Acres.	Rs. A. P.	Rs. A. P
Godavari Delta - - -	69,10,549	3,10,974	1,53,343	513,143	0 9 8	0 4 9
Kistna - - - -	44,93,902	2,02,226	1,35,875	226,226	0 14 4	0 9 7
Cauvery - - - -	13,48,900	60,701	1,06,805	923,737	0 1 1	0 1 10
Strivaiguntam - - - -	10,60,597	47,727	—*	26,255	1 13 1	—

* Information not available.

Paddy and cholum may be taken as fair samples of the chief crops raised with and without irrigation. The estimated produce per acre is 753 Madras† measures of paddy, value, according to the average of prices obtaining during the decade ending 1875, Rupees 33. The produce per acre of cholum is estimated at 296 measures,‡ valued at Rupees 20.

Mr. Longley.—There are no canals in this district; but there are three channels§ leading off from the Cauvery, under which a large extent of wet cultivation is carried on. As these channels were constructed prior to our acquisition of the country, their cost is not known. The revenue [Fasli 1287 (1876)] under the channels was Rupees 63,219.

The cost of maintenance (on an average of the last five years) is as follows :—

—	Raja Channel.	Moganur Channel.	Komarapolem Channel.	Total.
	Rs.	Rs.	Rs.	Rs.
Establishment - -	2,900	1,063	557	4,520
Repairing channels, &c.	1,736	536	337	2,609
	4,636	1,599	894	7,129

These charges are met from fees paid by landholders as the aggregate value of the customary labour and grain tax, which, from time immemorial, were contributed by them for the purpose. These grain fees were commuted in 1872 to a money payment, which constitutes a fund called "Channel Fees Fund."

The present acreage irrigated is under—

	Acres.
Raja Channel - -	3,825
Moganur Channel - -	1,535
Komarapolem Channel - -	993
	6,353

† Equal to 1,740 lb ‡ Equal to 875 lb.

§ 1 Raja channel; 2 Moganur channel; 3. Komarapolem channel.

The following are the rates per acre :—

Cost per Acre.	Estimate.	Repairs.	Rate per Acre.
	Rs. A. P.	Rs. A. P.	Rs A P.
Raja Channel - -	0 12 1	0 7 2	11 1 6
Moganur - -	0 11 1	0 5 7	7 12 6
Komarapolem Channel	0 9 0	0 5 5	8 15 4

There is only one principal crop raised under the channels, which is paddy, the average yield of which is 1,152 measures of 136 Rupees' weight. The value of this at normal prices is Rupees 48 per acre. These irrigated lands yield on an average five wet crops in two years.

Paddy is not cultivated without irrigation, so that no comparison in the manner indicated in the question can be made.

Mr. McWatters.—The present irrigation channels were in existence when the district was ceded to the British on the fall of Tippoo in 1799. There are no data for answering the first part of this question. However, the present acreage irrigated is only 4 per cent. of the whole cultivated area.

A good crop of first-sort paddy will yield 1,400 Madras measures* per acre, and a middling crop 1,000 measures. A good crop of second-sort paddy yields 1,300 measures, and a middling crop 1,000 measures. The current price of first-sort paddy is 10·8 Madras measures, and of second sort 11·4. Omitting from consideration the value of the straw, an acre of

* A Madras measure contains about—
3 lb. of rice or horse-gram.
2½ lb. of husked cholum.
2¼ lb. of do. raggi.
2¼ lb. of do. cumboo.
2⅓ lb. (nearly) of husked paddy.

The quality of the grain makes a difference in the weights. I have ascertained the above from ordinary bazaar grain I have found that a Madras measure of good paddy will yield 1½ lb. of rice.

(Signed) G. McW.

good first-sort paddy would be worth Rupees 129, and middling, Rupees 90; and an acre of good second-sort paddy would fetch Rupees 110, and middling, Rupees 80.

A good crop of cumboo yield 405 Madras measures per acre; cholum, 374; and ra i, 423. A middling crop of the same cereals yields, respectively, 242,261, and 255 Madras measures. Cumboo sells at present at 9·6 Madras measures per rupee, and ragi and cholum at 7·2.

The value of a good crop per acre would be—

	Rs.
Cumboo	40
Cholum	50
Raggi	58

and of a middling crop—

	Rs.
Cumboo	25
Cholum	36
Raggi	35

The out-turn or yield as above given has been arrived at by the Settlement Department after thousands of experiments, and are as accurate as ever such things can be. The present high prices will not continue much longer, but it is questionable whether they will ever rule as low as they did before the famine. The adoption of just rates, as between Government and the ryot, in introducing the new settlement, is a matter for grave consideration, seeing the altered state of things.

The selling prices taken as a standard by the Settlement Department have been calculated on an average of 20 years from 1845 to 1864, and are as follows:—

	Madras Measures per Rupee.
First-sort paddy	22·2
Second-sort paddy	24·
Cumboo	27·8
Cholum	20·7
Raggi	25·

Taking these prices, the value of an acre of each crop is as follows:—

	Rs.		At current Prices. Rs.
A good crop of first-sort paddy	63	=	129
A middling crop of first-sort paddy	45	=	90
A good crop of second-sort paddy	59	=	110
A good crop of cumboo	14	=	40
A middling crop of cumboo	8	=	25
A good crop of cholum	18	=	50
A middling crop of cholum	12	=	36
A good crop of raggi	16	=	58
A middling crop of raggi	10	=	35

Round numbers have been taken. The difference of value between the settlement prices and current are very marked. In the settlement it is proposed to make a deduction of 10 per cent. from the above prices for carriage of grain to market, and a further deduction of 20 per cent. is allowed for vicissitudes of season in calculating the assessment.

The Settlement Department seems to me to have been over-particular at first in attempting to classify soils and to ascertain to a nicety their relative productiveness under the different staples. These elaborate statistics were, however, thrown to the winds as soon as it was found that they would not serve a foregone conclusion.

The settlement rates actually introduced and about to be introduced in respect to lands under the best irrigation channels are, in my opinion, far too low.

The irrigated lands of this district pay no separate water cess.

Major H. M. Vibart.—The capital expended, to 1875–76 on—

	Rs.
Godavari Delta	69,10,549
Kistna	44,93,902

while yearly interest on them amounts to—

Godivari, about	15,61,019
Kistna	8,90,758

Annual cost of maintenance—

Godivari	1,54,761
Kistna	1,94,905

Acreage irrigated—

Godavari	5,13,143
Kistna	2,26,226

Godavari—

Capital expended per acre	13·46 Rs
Cost of maintenance	4·8 As.

Kistna—

Capital expended per acre	19·86 Rs.
Cost of maintenance	13·78 As.

When the Kistna works are complete, the sums will be greatly reduced.

It is difficult to arrive at the average local value per acre of paddy raised by irrigation.

In an irrigation experiment carried out at Chabrole, in Kistna district, in 1871–72, the gross value of produce of an acre (average of 9 acres included in experiment) was Rupees 43. The cost of cultivation, including kist (6 Rupees) was Rupees 15, leaving net value of produce 28 Rupees. This was when price of rice was 12 Madras measures for a rupee. At the present time, when rice sells at six measures per rupee, the gross value would be about 80 Rupees, and the net value Rupees 65.

During the famine, when rice was selling at four measures per rupee, the net value would probably have reached Rupees 100.

In an experiment carried on in Trichinopoly during 1873–74, the gross value of produce of an acre of paddy was found to be nearly 76 Rupees, thus making out net value about 61 Rupees. Rice was then selling at eight measures per rupee. Now, the crop would fetch, probably, 98 Rupees, the net value being 83 Rupees; and during the famine the value would have been considerably more than 100 Rupees.

The value of an unirrigated crop seems generally, as far as I can learn, to be one half that of an irrigated crop.

One result of experiments was to show conclusively that rice could be successfully grown with a supply of water somewhat less than 2 cubic yards of water per hour per acre; and in Trichinopoly experiment the ground which produced the best crop received only 2 cubic yards artificially, and 2·64 including rain. The yield of this acre was 3,908 lb. paddy and 6,300 lb. of straw.

In many parts of Tanjore and Trichinopoly and other districts two crops are grown, and the net value of the out-turn in these cases would probably be 80 to 100 Rupees.

Ch. IV. Qn. 13. **Question 13.—Water Rate and increased Rent, Revenue or Owner's Rate.**

What is the amount per acre paid for the use of water for the chief crops by the occupier in the shape of water-rate? What is the ordinary increased rent on irrigated over unirrigated land? What is paid by the proprietor per acre in the shape of land revenue or owner's rate? Is there any reason why a proprietor, whether paying land revenue or not, the yearly value of whose lands is increased by irrigation from canals constructed and maintained at the public cost, should not contribute to the State in return for the advantage he thus obtains? What seems to be the best way of obtaining such a contribution from him; first, where the land revenue is liable to revision; secondly, where it has been permanently settled; and, thirdly, where the land is not charged with revenue?

Punjab.

PUNJAUB.

Captain Ottley.—Amount per acre paid for the use of water for the chief crops by the occupier in the shape of water-rate:—

—	Western Jumna Canal.	Bári Doáb Canal.	Upper Sutlej Inundation Canals.
	Rs.	Rs.	Rs.
Sugar-cane - -	5 per acre.	6 per acre.	1 12 0
Cotton - -	2 4 0	2 8 0	2 0 0
Jowár - -	1 10 8	1 8 0	1 8 0
Rice - -	3 0 0	4 12 0	3 0 0
Wheat - -	2 4 0	2 8 0	0 12 0
Barley - -	2 4 0	2 8 0	0 12 0
Indigo - -	2 4 0	2 8 0	1 4 0
Gram - -	2 4 0	0 12 0	1 4 0

These rates are those charged for flow irrigation. When the water is lifted on to the fields the charge made is ⅔rds on the Western Jumna Canal and ½ on the Bári Doáb and Upper Sutlej Inundation Canals of the above flow rates. The great divergence of rates noticeable on the Upper Sutlej Inundation Canals is due to the fact that the number of waterings necessary from wells to supplement the inundation irrigation had to be taken into account. Thus rice, cotton, gram, and jowar can be usually matured by the canal water alone, which in the case of wheat, barley, and sugar-cane requires to be supplemented by wells.

On the Indus and Lower Sutlej and Chenab series no water-rent as a rule is charged, the profit of the canals depending on the share of the land revenue which has been assigned to them as the result of their operations.

The following extract from the chief engineer's review of the Revenue Report for 1870–71 explains the returns of the Shahpur Inundation Canals, which, though belonging to this department, are managed by the deputy Commissioner of the district.

"75. The mode of realising the returns from these canals is, I am informed, as follows:—

"One-fourth of the produce is taken from private lands irrigated by the canal; one-half from Government waste leased to cultivators. Jhallars or machines for raising the water are charged at Rs. 16 each.

The grain or other produce obtained as above is usually sold on the spot to the grain dealers, and has yielded about Rs. 2–14 per acre irrigated."

On the Bári Doáb Canal this rate varies. For a single crop it is Rs. 1–8–0; 1–4–0; 1–2–0; 1–0–0; 0–12–0 per acre, according to the particular village which is irrigated; when two crops are taken from the same piece of land in the same year, an addition of one-half of the above rates is made for the second crop. These rates apply to whole villages, and were fixed by the settlement officer at the settlement, and no information exists in the Irrigation Department as to how these rates were arrived at, or what guided the settlement officer in their application to any particular village.

The villages on the Western Jumna Canal pay at present an enhanced land revenue on certain areas which were classed at settlement as irrigated, and the payment is made whether these areas receive water or not. Of the incidence of these rates per acre no information is available in the Irrigation Department.

When the new settlement comes into force in the districts watered by the Western Jumna Canal, an owner's rate bearing a certain proportion (½ has been suggested) to the occupier's rate will be charged, and will be leviable only on the fields actually irrigated during each season.

No reason is known in the Irrigation Department why such proprietors should be exempt; on the contrary, it would seem that such proprietors might justly be charged in proportion to the advantages so obtained.

Major E. C. Corbyn.—The amount per acre paid for the use of water for all crops by the occupier in the shape of water-rate is Rs. 2–8. The ordinary increased rent on irrigated over unirrigated land is Rs. 2–8 per acre. The proprietor pays in shape of land revenue Rs. 1–4 per acre. There is no reason why a proprietor, whether paying land revenue or not, the yearly value of whose land is increased by irrigation from canals constructed and maintained at public cost, should not contribute to the State in return for the advantages he thus obtains.

Mr. O'Brien.—Nothing is paid per acre in this district as water-rate beyond the contribution to the cost of maintenance, which has in the answer to question 12 been estimated at Rs. 0–10–6 per acre.

Rent in unirrigated and irrigated land respectively.—The rent is always paid in kind. The customary rate is higher in unirrigated than in irrigated land, because the expenses and labour of cultivation are so much lighter in unirrigated than in irrigated. On the other hand, the landlord will get rent on only one crop in unirrigated land, and on two crops in irrigated, besides that his rabi out-turn in unirrigated is something less than on irrigated.

The rate of rent in unirrigated land is $\frac{16}{100}$ of the crop, and in irrigated land $\frac{33}{100}$. Taking then the case given in the answer to the preceding question, the rent in each sort of land will be as follows:—

—	Rent in Kind per Acre.	Value of the Rent in Money per Acre.
	Mds. Srs.	Rs. A. P.
Unirrigated land - -	3 24 wheat	5 3 5
Irrigated land - -	3 12 of wheat 1 26 cotton	4 12 0 5 15 4
Total irrigated -	—	10 11 4

No owner's rate is paid by proprietors. The land revenue on unirrigated, *i.e.*, sailába, and on irrigated, *i.e.*, irrigated by both canal and well, is per acre:—

	Rs. A. P.
Unirrigated - - -	0 14 0
Irrigated - - -	1 12 0

There is no reason, as far as this district goes, why a proprietor should not contribute to the State for advantage obtained from canals constructed and maintained at the public cost, or, as in this district, by the

irrigators. Accordingly, it has been provided in the settlement now being made that land coming under canal irrigation during the term of settlement shall pay from 6 to 8 annas per acre, even though it has not been assessed at settlement. I can suggest no better means of levying a contribution from the proprietor than this, *viz.*, assess land irrigated by canal at settlement at a rate that shall represent the difference in value between land unirrigated and irrigated by wells only, and provide that land getting canal water for the first time during settlement shall pay a rate similar to the difference between irrigated and unirrigated rates.

Mr. Tremlett.—The Muzaffargarh canals differ, I believe, from those in other parts of India in that they are the property of the villagers; the only aid derived from the Government being, to the best of my remembrance, that it is customary to remit the revenue on land occupied by them, and waste land required for new cuts is granted free of charge when it happens to be Government soil. No rate is consequently paid to Government in any way,—at least, directly; for as large areas are cultivated by means of these village canals, which would otherwise remain waste, at any rate for many years to come, a large proportion of the five lakhs of revenue which the district yields is entirely due to these works, and is a very handsome seigniority on the Government right in the river water.

Mr. Roe.—The liability to furnish "chers," as explained in the preceding answer, takes the place of the occupier's or water-rate. The owner's rate is paid in the shape of land revenue. This was fixed at the last of settlement in a lump sum for each village Out of this the settlement officer declared so much to be due to canals. The revenue thus fixed was not liable to enhancement in case of increase of irrigation, nor could ordinarily a remission be claimed in case of a decrease, but it was stipulated that one should be granted in case of exceptional failures of the canals. The total land revenue thus declared liable to remission was Rs. 2,14,665. The irrigated area was 2,26,579. So that the average enhancement on account of canals was a little under 1 rupee per acre. Rents are all paid in kind, and there is little difference in the rate for canal and non-canal lands. But we might perhaps say that a proprietor who had been taking $\frac{1}{4}$th for an ordinary well, would, if he extended canal irrigation to it at his own expense, raise his rate to $\frac{1}{3}$. But I have known no such case of enhancement, and the case which appears to be contemplated in the latter part of this question, viz., that of an extension of irrigation at the sole expense of the tenant, is quite unknown.

NORTH-WESTERN PROVINCES AND OUDH.

Board of Revenue. — The difference between wet and dry rent-rates (wet rent-rates, as a rule, not varying according to the mode of irrigation, *i e.*, whether from well or canal) may be roughly calculated to average Rs. 2 per acre. Mr. Cornwall estimates the average of wet and dry rates to be in the following "proportion for the whole district, assuming dry unmanured rent-rate to be 100."

	Per acre.
Dry unmanured	100
Dry manured	158
Wet unmanured	145
Wet manured	218

The collector of Saharanpur estimates the average difference between the rent-rate of irrigated and unirrigated land at 6 annas in the rupee.

The proprietor of canal-irrigated land pays, as owner's rate, under existing rules, one-third of the occupier's rate leviable on the land, provided that the sum really is not more than he would pay as revenue under existing settlement rules. The rule is a clumsy one. The canal department estimate the value of wheat per acre of canal-irrigated land at Rs. 32, and of gram at Rs. 18. But the occupier's rate on land growing gram and land growing wheat is the same. So, though the landowner will get a much larger enhancement over the *dry* rent on wheat-growing than on gram-growing lands, he will pay the same owner's rate in both cases. Besides, the more the owner may have to pay if the water-rate is raised, the more he will have to pay as owner's rate. This is burning the candle at both ends. The rule would be less illogical if the water-rate bore in all cases (it does in some) some proportion to the value of the crop irrigated. The Board see no reason why a proprietor, whether paying revenue or not, should not contribute to the State for an advantage he obtains, not from an expenditure of his own funds, but from an outlay incurred by the State. It may be objected, the Board think, with more reason than truth, that additional land revenue due from canal irrigation is as much land revenue as land revenue derived from land not irrigated, and that the assignee of the land revenue is as much entitled to the former as the latter. To this it may be replied that the State is entitled, in equity, as is now by law, to demand from the landowner, whether paying land revenue or not, payment, in part at least, in defrayment of the cost of a very expensive work by which he is himself largely benefited in the form either of additional profits, if he himself cultivates the land, or of enhanced rent, if the land is leased to tenants. The case would be otherwise if the tenant were protected, as the Board think he ought to be, from enhancement of rent under that section of the Rent Law which forbids such enhancement when increase in the productive powers of land, or in the value of its produce, is due to the tenant's expenditure incurred by the tenant. But, so long as the landlord can enhance his rent, owing to canal irrigation, he is justly liable to the payment to Government of that share of the additional rent which Government can claim as revenue. Again, if increase in the value of the produce, or in the productive powers of the land, resulting from the expenditure of money, of which no part has been contributed by the zemindar, is held to justify him in enhancing the rent assessed on such land, then, at revision of settlement, the contribution by the landholder towards the defrayment of expenses incurred in making and maintaining the canal can best be secured by assessing the land watered by the canal at *irrigated* rates. Where the settlement is permanent and there are tenants at fixed rates whose rents the zemindar cannot enhance, and who, therefore, appropriate all the profits arising from canal-irrigation, the tenants may be fairly called on to contribute their quota.

Colonel Brownlow.—I know of no reason why proprietors, whose lands are benefited by irrigation from canals, constructed and maintained at the public expense, should not contribute to the State in return for the advantage thus conferred on them. The best way of obtaining such a contribution seems to be by the levy of an owner's rate in permanently settled districts, and where land is not charged with revenue; also where land revenue is liable to revision *during currency of a settlement.* In the last case, the first revision of settlement should be taken advantage of to merge the "owner's rate" into the land revenue, and have done with it, except as an "indirect" annual credit to the Irrigation Department.

Ch. IV Qn. 13.

North-Western Provinces.

Mr. C. C. Anderson.—(1.) The occupier's rates for water in 1876–77 were:—

	Ganges and Eastern Jumna.		Agra.		Rohilkhand.		Dún.		Bundelkhand.	
	Flow.	Lift.	Flow.	Lift.	Flow.	Lift.	Flow.	Lift.	Flow.	Lift.
	Rs. a. p.	Rs. a. p.	Rs. a. p	Rs. a. p	Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.
Gardens - -	3 0 0	2 0 0	4 0 0	2 0 0	2 0 0	1 0 0	3 0 0	—	4 0 0	2 0 0
Sugarcane - -	5 0 0	3 5 4	6 10 8	3 5 4	2 8 0	1 10 8	5 0 0	—	6 10 8	3 5 4
Wheat - -	2 4 0	1 8 0	3 0 0	1 8 0	0 12 0	0 8 0	1 4 0	—	3 0 0	1 8 0
Barley - -	2 4 0	1 8 0	3 0 0	1 8 0	0 12 0	0 8 0	1 4 0	—	3 0 0	1 8 0
Rice - - -	5 0 0	3 5 4	6 10 8	3 5 4	2 4 0	1 8 0	3 0 0	—	6 10 8	3 5 4
Maize - -	1 10 8	1 0 0	2 0 0	1 0 0	0 4 0	0 2 0	1 4 0	—	2 0 0	1 0 0
Joar - -	1 10 8	1 0 0	2 0 0	1 0 0	0 4 0	0 2 0	1 4 0	—	2 0 0	1 0 0
Gram - - -	2 4 0	1 8 0	3 0 0	1 8 0	0 12 0	0 8 0	1 4 0	—	3 0 0	1 8 0
Peas - -	2 4 0	1 8 0	3 0 0	1 8 0	0 12 0	0 8 0	1 4 0	—	3 0 0	1 8 0
Fodder - -	1 10 8	1 0 0	2 0 0	1 0 0	—	—	—	—	2 0 0	1 0 0
Cotton - -	2 4 0	1 8 0	3 0 0	1 8 0	—	—	2 4 0	—	3 0 0	1 8 0
Indigo - -	2 4 0	1 8 0	3 0 0	1 8 0	—	—	2 4 0	—	3 0 0	1 8 0
Opium - -	3 0 0	2 0 0	4 0 0	2 0 0	0 8 0	0 4 0	3 0 0	—	4 0 0	2 0 0

(2.) The ordinary increased rent on irrigated over unirrigated land is said to be Rs. 2.

(3.) Owner's rate is charged at one-third the occupier's rate.

(4.) No reason whatever why a proprietor, whose lands are benefited by irrigation from canals constructed and maintained at the public cost, should not contribute to the State in return for the advantage he obtains.

(5.) The levy of an owner's rate in all cases seems to be the best way of obtaining such a contribution.

Bengal.

BENGAL.

Colonel Haig.—In Bengal water is supplied from the canals at rates varying with the term for which the land is leased for irrigation—whether for one year, three years, or five years. The water-rates now levied are per acre—

—	Five-year Leases.	Three-year Leases.	Annual Leases.
Orissa.	Rs.	Rs.	Rs.
Rice - - - -	1-8	None	3
Rubbee crops - -	None	Do.	1 to 2
Sugar - - - -	Do.	Do.	6
Midnapore.			
Rice - - -	1-8	Do.	2-8
Rubbee crops - -	None	Do.	None
Sugar - - -	Do.	Do.	Do.
Sone Canals.			
Rice - - - -	Do.	1-8	2-8
Rubbee crops - -	Do.	2-4	2-8
Sugar - - -	Do.	None	5

On the Sone Canals three-year leases are given either for khureef or rubbee crops, or for both. In the case of khureef they must include the whole, and in the case of rubbee at least one-half, the irrigable area in the village. In Orissa and Midnapore, where almost all the cultivation is khureef rice, the whole irrigable area is being leased this year on five-year leases.

With regard to the latter part of question 13, I see no reason why a proprietor, whether he pays revenue to Government or not, should not be required to pay an owner's rate if his land acquires an increased value from irrigation; but irrigation is of too recent date in Bengal, and the subject surrounded with too many difficulties, for me to answer the other questions under this head.

Bombay.

BOMBAY.

Colonel Anderson.—The rates on canals and tanks constructed by and now under the Irrigation Department are fixed by them, and I leave them to answer for their own works.

In the case of all old tanks and channel irrigation from streams by means of dams constructed by the people themselves, the settlement department fixes the rates, which vary in different districts and parts of districts according to local circumstances, which so exceedingly vary that it is impossible to define any general rule of rating. In Dharwar, for instance, in some parts in lands under tanks, cocoanut and areca palm cultivation flourishes, and there the rate per acre runs as high as Rs. 15, of which about Rs. 13-8 would be due to water. On rice land irrigated from tanks in Dharwar the portion of the assessment due to water would range from Rs. 1 up to Rs. 8, according to whether the irrigation admitted of sugarcane being grown in these lands or not in triennial rotation, or whether one crop of rice alone could be obtained, or whether a second crop of grain or pulse could be obtained after the rice.

Of rents proper, that is cash rents, we have not much in the south of Bombay. Half gross produce is the common rate of subletting, and there is less subletting in irrigated land than in dry crop land, but in the former the proportion of gross produce given sometimes exceeds half. It is exceedingly difficult to obtain any accurate information from the people about the terms in the occasional cases of cash rents which do exist. As a general rule the information given is wrong; the people prefer to keep affairs of this nature to themselves, and cash rents, when paid, are often mixed up with a payment also of some portion of produce.

The point in this question as to whether a proprietor, whether paying land revenue or not, should not pay water-rate if the yearly value of the lands are increased by irrigation canals constructed and maintained at the public expense, will in Bombay

apparently in the main refer to holders of inam villages, though in principle it will apply to all lands. If such persons use the water they should of course pay for it whenever they use it, without waiting for revision, but the using it must in my opinion remain optional.

As regards lands paying revenue to Government, and lands entirely or partially free from payment of revenue, but situated in villages administered by Government, I would provide that after a year or two of trial a landholder should be required to state whether he accepts water for a certain survey field permanently and finally, fixing the supply which he should receive, namely, up to such a month in each year. The water assessment in this survey field would then become a permanent portion of the land revenue debited against it, and all inspection and measurement of crops, &c. would be obviated. When an irrigation work is brought into operation on land hitherto unirrigated, the lands susceptible of irrigation and desired to be irrigated should be divided up ordinarily into survey fields of about three acres and defined by boundary marks, these survey fields being shown on the map of the village. This renders it easy for the holder to bring field after field under irrigation, and water-rate permanently as his means and convenience admit. There must always, in case of a new work coming into operation, be a preliminary period of three or four years allowed to the people to accustom themselves to irrigation, and to find out what lands it suits. During this period areas actually irrigated each year must be measured off for assessment of water-rate. For the first year of these introductory years water should be allowed free, and then go on gradually-increasing rates. The scale of rates for each year should be given all publicity before the first year.

As regards inam villages the above course would hardly be feasible, as it could not be worked without the consent of the inamdar, which would rarely if ever be given. In such villages the simplest course would be to allot a certain supply of water at a certain lump payment agreed upon with the inamdar, and leave the detailed management of it to him. As regards permanently settled tracts, one or the other of the above courses would equally apply, according to the area of each estate.

The charge that agriculturists use more water than is necessary is commonly made. I doubt the entire truth of this charge. Too much water does more harm than good. Ryots know how much water they practically require. Doubt possibility of giving out water in detail by module. Contract system not practicable except on a large scale, such as supposed in case of inam villages above, and above all not compulsorily.

Excepting on canal works, water-rates in Bombay are fixed under the Settlement, and for the period of the Settlement, and can only be increased under the terms of the guarantee if Government should improve the water supply on irrigated lands, or if additional land is brought under irrigation from Government water.

Mr. Hughes.—A statement (Appendix E. of the Budget) showing the water-rates in force on each of the new works in Guzerat and the Deccan is attached.

The rates are generally arranged in four classes, according to the quantity and value of the water. Thus—

Class I. comprises sugar and other perennial crops.

Class II. comprises eight months' crops, such as ground-nut. The eight months' rate covers the eight months of irrigation commencing in June. A cultivator may raise two crops during this period for the eight months' rate.

Class III. comprises four months' crops, such as wheat, gram, &c.

Class IV. comprises monsoon dry crops, jowari, bajri, and inferior rice.

On most of the works there is in addition a special rate for irrigation for the four months from February to May, when the water is very scarce and consequently valuable.

The rates for Classes II., III., and IV. are the same on nearly all the works, namely, Rs. 4, 2, and 1 per acre respectively. The rate for Class I., perennial crops, varies. On the first opening of a work it is generally fixed at Rs. 8 per acre, and this rate usually remains in force for five years, when it is increased to Rs. 10. On four of the works in Satara, which have been in operation for 10 years, and where the demand for perennial irrigation is greater than the supply, the rate has recently been raised to Rs. 18 per acre. On the Mutha Canal, in the vicinity of Poona, the rate is also Rs. 18. In these cases only half the rate, or Rs. 9, is chargeable for the first year on land not heretofore irrigated. On the Jamda Canal in Khandesh the rate is Rs. 16. On all the other works it is either Rs. 8 or Rs. 10.

The existing rates then are usually as follows :—

Class I. - - -	Rs. 8 to Rs. 18.
Class II. - - -	„ 4
Class III. - -	„ 2
Class IV. - - -	„ 1

The special rate for irrigation between February and May is either Rs. 6 or Rs. 4. Half rates are charged when the water is lifted on to the land, and half the perennial rate is levied when the supply is insufficient and wells have to be resorted to during the hot weather.

The average rate assessed under these scales on the 24,389 acres irrigated during 1877–78 is Rs. 3·42 per acre. These rates, more especially that for perennial crops, are generally regarded by persons familiar with the irrigation system of Northern India as exceedingly high, but they overlook the fact that in this presidency, where the revenue system is ryotwari, the water-rate charged by Government is the total charge the cultivator has to pay for the water. I find it stated that in the North-West Provinces, with a water-rate of Rs. 5 per acre for sugar, cultivators pay for sugar-cane about the following proportion—

Rent to landlord for sugarcane, say	Rs. 16 per acre.
Rent to Government for canal water	„ 5 „
Total - -	„ 21 „

A cultivator in this presidency irrigating from one of our new canals would under similar circumstances pay—

Water-rate from - -	Rs. 8 to 18 per acre.
Land assessment, say -	„ 2 „
Total, from	Rs. 10 to 20 „

The rate of Rs. 2 for the land assessment is an assumed one, but the instances in which it is exceeded are not many.

Under the ryotwari system there are no "owners" as distinct from "occupiers," and consequently no "owner's rate." Where separate water-rates are levied for the use of canal water, there is no increased rent, that is, assessment on the land.

But the yearly value of land is increased by the construction of an irrigation work which brings the means of irrigation within its reach. The benefits which a work of irrigation confers on the land it commands are described at some length in the accompanying memo. by Colonel Fife, and the principle of enhancing the land assessment paid by the ryots in consideration of these benefits has been fully recognised by Government, but in the present state of the law it is only feasible to make such enhancement at the time of the revision of the land-revenue settlement. The question of the method of fixing the addition to be made to the survey rates on account of these indirect advantages has been considered by the survey officers. The Survey Commissioner, in reporting on the subject, admits "the difficulty of "making a regular valuation of the benefits accruing

CH IV. QN. 13.

BOMBAY.

"from the influence of irrigational works, but that "there are indirect advantages of a certain kind, and "which are set forth in Colonel Fife's report, must "be admitted, and all that is required to be done is "to take them into account in a general way," and he considers that "in future the question of indirect "advantages should be separately treated and a specific "addition made [to the rates] on that account."

These proposals have been approved by Government, and have already been given effect to in the revision settlement of the land under the Palkhed Canal in Nasik and in the settlement introduced into one of the villages transferred from the Nizam's government under the Bhatodi tank in Ahmednagar. Particulars of these cases will be found in paras. 179 and 292 respectively of the Revenue Report for 1876–77 attached.

Government in the Revenue Department have also ordered that—

"Survey officers should, in future, give notice to the holders of land in the vicinity of canals under construction or about to be constructed, in a district in which a survey settlement is about to be introduced, that on its completion they will be liable to increase of assessment not only when they take water, but also when they are benefited by the canal through percolation or other advantage."

And also that—

"Where the rates have already been sanctioned and given out, no increased assessment can be imposed in consideration of the benefit conferred on the land by its proximity to an irrigation work. When future settlements are introduced, however, in places where there is a probability of a canal being constructed, due notice should be given that the rates will be liable to enhancement on account of indirect as well as direct benefits accruing from it."

Mr. Propert.—There are two systems of assessment—

(1.) That settled by the Revenue Survey. This is a water-rate per acre irrespective of the crops grown, varying from Rs. 5 to Rs. 18 per acre. The former rate is levied in the case of water supply lasting only through the cold weather, and where the bandhara or weir is not permanent. The higher rates are levied in the case of an ample perennial supply, first-class soil, and permanent weirs.

(2.) The rates on new irrigational works. These vary from Rs. 10 to Rs. 15 for perennial crops, and from Rs. 2 to 4 rabi, rice, and garden crops. Rupee 1 per acre for monsoon crops, such as millets, oilseeds, &c. The above rates represent the increased rent on irrigated over unirrigated land. In the case of Khandesh, proprietors are represented by a few jahagirdars, who as a rule pay Government a quit-rent yearly. Government, however, may be considered as almost the sole proprietor of all lands irrigated by the new projects. In districts where proprietors are ordinarily to be found, if they pay land revenue, I should say that the water-rate might be imposed in addition to the ordinary revenue demands. In the case of permanent settlements and proprietary land not charged with revenue, I should think that legislation would be necessary to enforce payment of water-rate.

MADRAS.

MADRAS.

Mr. Sullivan.—(*a.*) The following are the standard charged rates for water from Government sources of irrigation :—

	Rs.	A.	P.
For a single crop, per acre	4	0	0
For second crop on the same land, per acre	2	0	0
For special crops, such as sugar-cane, betel, &c., requiring irrigation for a longer period than an ordinary wet crop, per acre	6	0	0
For irrigation of dry crop, per acre	2	0	0

The above rates are charged in addition to the assessment payable on dry lands when such lands are brought under irrigation by means of water supplied from Government sources. But under the old irrigation works of the country there is a vast extent of land permanently classed as wet and bearing a consolidated wet assessment, *i.e.*, the land assessment and the water-rate are merged, and the figures given in the appended statement would at first seem to indicate the extreme difficulty of determining with any approach to accuracy the money value of water applied to land throughout the Presidency. The two columns give the average rate of assessment per acre for unirrigated and irrigated land, respectively, in all districts except the Godavari and Kistna, and the difference between them may be assumed to be the value of the water in each locality. It will be observed, however, that the variations in the wet rates are very considerable. They range from Rupees 2-4-0 per acre on the Nilgiri to Rupees 9-7-10 in Tinnevelly, and excluding the former district, the circumstances of which are exceptional, the figures show that where the assessment on the dry land is lightest (whence it may be inferred that the quality of the soil is inferior) there the value of the water is the greatest, and curiously enough the average water-rate of the 17 districts (that for each being calculated in the manner above indicated) comes out within a trifling fraction as Rupees 4, the amount levied under the water-rate rules in addition to the assessment on all lands irrigated from Government sources which are not permanently classed as wet.

AVERAGE DRY AND WET RATES.

Districts.	Average Dry Assessment per Acre			Average Wet Assessment per Acre.		
	RS.	A	P.	RS	A.	P.
Ganjam	1	4	5	2	14	4
Vizagapatam	1	2	1	5	3	11
Nellore	1	2	9	5	7	4
Cuddapah	0	12	5	6	12	8
Bellary	0	9	11	4	15	2
Kurnool	0	14	7	6	2	7
Chingleput	1	6	7	3	10	5
North Arcot	1	6	2	5	12	4
South Arcot	1	11	3	5	5	5
Tanjore	1	3	11	4	13	11
Trichinopoly	0	14	11	4	2	9
Madura	1	4	6	4	2	9
Tinnevelly	0	12	7	9	7	10
Coimbatore	0	14	3	7	5	8
Nilgiri	0	9	4	2	4	0
Salem	1	2	1	5	10	3
Malabar	1	9	1	3	0	1

No reason whatever why proprietors should not contribute to the State in return for the increased value of their land conferred by irrigation from canals constructed and maintained at the public cost. Act VII. of 1865 (Madras) makes ample provision for the levy of such contribution from all descriptions of landholders.

Lieut.-Colonel Mullins.—Water-rates, rent, &c.—The particulars of water-rates are subjoined :—

GODAVARI AND KISTNA DELTA SYSTEMS.

—	Per Acre irrigated.	
	Flow.	Lift.
	RS. A. P.	RS. A. P.
Single wet crop - - -	4 0 0	3 0 0
Second wet crop on irrigated land -	4 0 0	3 0 0
If compounded for two crops for a term not less than five years -	6 8 0	4 14 0
Single dry crop - - -	2 0 0	1 8 0
Second dry crop on irrigated land (if not compounded) - -	2 0 0	1 8 0
Sugar-cane, betel plantations, and other garden produce remaining on the ground for the time of two crops - - - -	8 0 0	6 0 0
Do. if compounded for not less than five years - - -	6 8 0	4 14 0
Dry crop on land for which irrigation has never been supplied, or, having been once supplied, has been since continued - -	2 0 0	1 8 0

MADRAS IRRIGATION AND CANAL COMPANY.

Sugar-cane, betel leaves, cocoanuts, plantains, saffron, fruit-trees (various) - - -	12 0 0	8 0 0
Rice, field-sown - - -	6 0 0	4 0 0
Rice on bedded and bunded fields—		
First year - - - -	3 0 0	2 0 0
Second year - -	4 0 0	2 10 8
Third year - - -	5 0 0	3 5 4
Subsequent years - -	6 0 0	4 0 0
Garden raggy, onions, chillies, sweet potatoes, tobacco, maize, garden korra, indigo, brinjals, yava (wheat), cummin, bariga, mentilu	4 0 0	2 10 8
Cholum, field raggy, field korra, field tobacco, field chillies, cotton, gram (various), oil-seeds (various), areca - - - - -	2 0 0	1 5 4
For a series of crops - -	6 0 0	4 0 0
For first-class crop, matured partly from canal and partly from other sources - - - - -	1 8 0	1 0 0
For second-class crop, matured partly from canal and partly from other sources - - - - -	1 0 0	0 10 8
For irrigation from canal after 1st January, rice excepted - -	1 0 0	0 10 8
For water supplied to store in a tank	1 0 0	—
If conveyed to a crop, the same rates as if supplied direct from canal. If not, conveyed free - -		
Crop on land cultivated under the tank supplied during any of the five years previous to opening the canal - - - -	Free.	—
Crop on other land in the tank ayacut	The difference between the wet and dry assessment.	
Crop on land outside the ayacut -	Same rate as is supplied direct from the canal.	

No water-rates in force in the other irrigation systems of the Presidency, the water-tax and assessment being consolidated.

There is in the Irrigation Department no information as to the ordinary increased rent on irrigated over unirrigated land. In this Presidency, so far as has come under notice, the practice has been—

(1.) For a Zemindar to pay peishcush or quit-rent for his estate;

(2.) For the total wet ayacut, or land classed as wet, to be supplied from Government canals free of charge, irrespective of the previous average or even maximum extent of irrigation during any immediately preceding period, where the old sources of irrigation are superseded by canals. The instances referred to are the Nidadavol and Baharzalli Zemindaris in the Godavari; and,

(3.) For the Zemindar to pay the ordinary water-rates on lands irrigated in excess of the former total ayacut.

No instance of enhancement of the peishcush or quit-rent has come under notice. There would probably be great difficulty in obtaining any payment beyond the water-rate from Zemindars, even could it be proved that their estates had been generally benefited by the construction of irrigation works, because the peishcush is not liable to enhancement.

Mr. Longley.—The lands under the Cauvery Channels pay a consolidated wet assessment, and no special water-rate is levied, except in the case of dry lands temporarily cultivated, in which case water-rate is levied according to the following scale:—

	First-Class Tanks, River and Spring Channels.
	RS. A. P.
(*a.*) Water rate for a single wet crop raised on dry lands, per acre - - -	4 0 0
(*b.*) Second crop on the same land per acre -	2 0 0
(*c.*) For sugar-cane, betel, cocoa-nuts, plantains, &c., requiring water longer than ordinary dry crops, per acre - -	6 0 0
(*d.*) For dry crops watered, whether first or second crop, per acre - - -	2 0 0

Fees for the maintenance of the channels are paid at the following rates:—

	RS.
Direct irrigation per acre -	2
Baling do. -	1

The ordinary rent paid under the channels is—

Channels.	Per Acre.	
	Rent in kind, Madras Measures.	Rent in Money.
		RS.
Raja Channel - - - - -	1,152	48
Moganur Channel - - - -	768	32
Komarapoliem Channel - -	960	40

The average rates paid by the proprietor per acre in the shape of land revenue or owner's rate are—

	Rs.	A.	P.
Raja Channel, per acre -	11	1	6
Moganur do. -	7	12	6
Komarapoliem do. -	8	15	4

There is no reason why persons deriving increased benefit by irrigation from canals, &c., maintained at public cost, should not pay for the additional advantages; but Inamdars holding lands under Cauvery Channels do not pay any tax for irrigation, as they are entitled by their Inam to the same (irrigation) free. Zemindari ryots pay consolidated wet assessment on their lands to Zemindars (and Government ryots to Government), as the assets on which the peishcush (payable by Zemindars) was fixed included the same.

The following are the rates per acre—

Cost per Acre.	Estimate.	Repairs.	Rate per Acre.
	RS. A. P.	RS. A. P.	RS. A. P.
Raja Channel - -	0 12 1	0 7 2	11 1 6
Moganur - -	0 11 1	0 5 7	7 12 6
Komarapoliem Channel -	0 9 0	0 5 5	8 15 4

There is only one principal crop raised under the channels, which is paddy, the average yield of which is 1,152 measures of 136 rupees' weight. The value of this at normal prices is Rupees 48 per acre. These irrigated lands yield on an average five wet crops in two years.

Paddy is not cultivated without irrigation, so that no comparison in the manner indicated in the question can be made.

CH. IV. QN. 13.

MADRAS.

Mr. W. Wilson.—The water-rates in the Kistna and Godavari districts are as follows:—

(1.) For a single *wet* crop, Rupees 4 an acre.

(2.) For a second *wet* crop on irrigated land, Rupees 4 an acre, provided that the cultivator may compound for irrigation for two crops for term of years not less than five, for Rupees 6–8–0 an acre.

(3.) For a second *dry* crop on irrigated land, Rupees 2 an acre, except where the landholder has compounded under Clause 2.

(4.) For sugar-cane, betel, plantains, and other garden produce remaining on the ground for a time of two crops, Rupees 8 an acre, provided that the cultivator may compound under Rule 2 for Rupees 6–8–0 an acre.

(5.) For a dry crop grown on land for which irrigation has never been supplied, or having once supplied has since been discontinued under Rule 3, Rupees 2 an acre, whether the crop be a first or second crop.

(6.) When the water used for irrigation cannot be obtained without raising it by baling or mechanical contrivances, a deduction of one-fourth of the water-rate will be made.

The same principles are adopted in charging for water-supply to lands not classed as wet which receive water from tanks and water-courses in the uplands of these districts, and under all other tanks in the Presidency, with certain exceptions. The assessment of irrigated lands is not always greater than that of unirrigated lands. The consolidated assessment of the inferior classes of irrigated land is generally lower than that of the better classes of dry land.

The following table shows for the districts settled by the Revenue Settlement Department the average incidence of wet and dry rates. Taking only the Kistna and Godavari Deltas, where land assessment and water-rate are separated, the average of the former is for the Kistna Rupees 1-14-11, and for the Godavari Rupees 2-6-8 an acre:—

Districts.	Average Rate per Acre.					
	Wet.			Dry.		
	RS.	A.	P.	RS.	A.	P.
Ganjam	3	5	0	1	4	5
Godavari	6	0	7	1	12	9
Kistna	5	14	1	1	8	5
Nellore	5	5	0	1	3	7
Cuddapah	6	7	2	1	2	4
Chingleput	3	8	4	1	2	8
Trichinopoly	4	4	2	0	15	5
Tinnevelly	6	10	2	0	11	2
Kurnool	5	14	3	0	15	4
Salem	4	8	11	1	2	3
South Arcot	5	8	7	1	13	5

If lands are increased in value by irrigation, it is to be supposed that they are irrigated, and that the proprietor pays for their irrigation, unless he is entitled to it for nothing.

Mr. Crole.—The Madras Irrigation and Canal Company's canal is the only work of this kind in Kurnool. Capital expended to date* is Rupees 1,61,01,982. The yearly interest (guaranteed) is Rupees 4,99,833, while the canal earned in 1875–76† only Rupees 57,633. The annual cost of maintenance is Rupees 1,47,605 on the average of six years ending 1876–77. Irrigated acreage of all kinds was 14,763 acres for 1875–76. The corresponding capital and interest per acre is Rupees 1,090–10–0 and Rupees 33–12–0, respectively. The local value per acre of chief crops irrigated is paddy Rupees 19, raggi Rupees 17, cholum Rupees 12–8–0.

Paddy cannot be raised without irrigation. Cholum raised without irrigation is a more valuable crop.

The water-rate is Rupees 6 per acre for paddy, Rupees 4 for garden crops, Rupees 2 for crops requiring only occasional floodings, and Rupees 12 for sugar-cane and betel gardens (*vide* enclosed extract from Canal Water-rate rules). The ryot pays from Annas 4 to Rupees 5 per acre for land-revenue. The ryots (landlords) do now pay half the net produce to Government. Increased value conferred by irrigation works is taken into consideration in the settlement of such holdings as are thus "permanently improved." No further contribution could fairly or in good policy be exacted from the ryot.

Revised Water-rate Rules.

I. Before the 1st day of April in each year the agent of the company shall inform the collectors of districts what portions of each village under the influence of the canal he is prepared to irrigate during the ensuing irrigation season, and the collectors shall have the above information duly posted up and publicly notified in each village concerned, through the curnams, before the 1st day of May following. The canal administration shall, at the same time, send a notice to the curnam of each village in anticipation of the collector's order.

II. No canal water shall be used for irrigation purposes unless an application made verbally by the ryot be previously registered by the village curnam, or else the ryot must first make written application through the canal officers to the village curnam. Separate application should be made for water required for first and second crops. The canal officers will be at liberty to supply water immediately on the receipt of applications; and these, on transmission to the curnams, will be completed as regards revenue details by them and transmitted to the tahsildars.

III. Applications will be registered for whole revenue fields, or recorded sub-numbers of survey fields, however small they may be; except for crops classed as double, water will not be supplied for arrears less than one acre in fields of larger extent. The curnam is authorised to subdivide family holdings or joint holdings of putta amongst the individual owners for the purposes of irrigation, provided none of the family or putta-holders make objection thereto, and will duly report such subdivisions to the tahsildars.

IV. If water is taken without application or registration, the cultivator will not be entitled to remission, and he will be charged on the portion irrigated, provided that the charge shall never be for less than an acre, except in the case of fields, the recorded extent of which is less than an acre, when the charge shall be on the whole field; he will further be required to pay a fine of 8 Annas an acre or fraction of an acre irrigated for the first offence, 1 Rupee an acre or fraction of an acre for the second offence, and thereafter such an addition, not exceeding double the rate, as may be considered equitable by the settling officers.

The canal officers are entitled to inspect fields without damaging the crop; and the holders are bound to permit the inspection and measurement of canal officers equally as of revenue officers.

In cases of surreptitious irrigation the rate to be levied will be that which is most favourable to the ryot amongst the rules applicable to his case.

V. The company do not, except under their tanks, guarantee a supply of water beyond the 31st December; but, so far as water may be available in the Toomboodra or other streams feeding the canal, it

* 30th June 1877.

† This is the latest year for which I have figures for both districts complete. It is, besides, the latest normal year. The canal revenue increased very much in 1876–77 and 1877–78 on account of dry crop watered during the famine, but during the present season (1878–79) these figures will not be maintained. In point of fact, the revenue will, in all probability, be much the same as in 1875–76.

will be supplied to all except first-class single crops at the rate of 1 Rupee a month, so long as the supply lasts, until the annual closing of the canal, which will be notified not later than the 1st December.

VI. The full rate per acre charged for water on application shall be as follows :—

Clause 1. First-class crops requiring continuous supply—

	Rs.
First crop - - -	6
Second crop - -	6

These crops include rice and the following double crops, viz., sugar-cane, betel leaves, coacoanuts, plantains, saffron, fruit-trees (various).

NOTE.—The rate for crops classed as double will be on the area of such crop irrigated, whether with or without permission, independent of the area of the field.

Clause 2. In future years the rate of first-class single crops when raised on fields so levelled and bunded that quiet water will stand at a depth of a finger to a hand-breadth over a whole bed will be for the first year of cultivation Rupees 3, for the second year Rupees 4, for the third year Rupees 5, an acre, single rate. After the third year full rate will be charged for crop irrigated on the same fields.

Clause 3. Second-class crops requiring frequent floodings, Rupees 4.

These crops include garden ragi, onions, chillies, sweet potatoes, tobacco, maize, garden korra, indigo, brinjals, yava (wheat), cumminbariga, mentilu.

Clause 4. Third-class crops requiring occasional floodings, Rupees 2.

These crops include cholum, field ragi, field korra, field tobacco, field chillies, cotton, gram (various), oil-seeds (various), areca.

Clause 5. A "crop" includes one, two, or more crops sown together in intermediate rows at the same time. Double crops or those requiring irrigation for more than six months, except indigo, pay double the rates specified for their class, unless supplied after 31st December, at the monthly rate.

Clause 6. For a series of any crops, rice excepted, raised from the beginning of the season up to 31st December, Rupees 6.

Clause 7. For a series of any crops, rice excepted, raised from 1st of January to the closing of the canal, per month Rupee 1.

Clause 8. If water is not supplied for the whole time the crop is on the ground and the crop is matured from other sources, the charge on crops of the first-class shall be at the rate of Rupees 1-8-0 and on crops of the second-class at the rate of Rupee 1 per month of canal irrigation. This clause is intended to apply to crops supplied from the canal after other sources have failed as well as from other sources after the canal irrigation has ceased.

Clause 9. For water supplied to a tank for storage for the purposes of irrigation, the rate shall be 1 Rupee for 1,440 cubic yards, the quantity being measured at the supplying sluice. Water shall be supplied as above on the requisition of the collector or tahsildar.

Clause 10. If water is baled the charge shall be two-thirds of the full rate.

Clause 11. Land irrigated by canal water springing up in a field and not conveyed over the surface will not be charged. Surface irrigation by canal leakage water conveyed to lands for purposes of irrigation within the limits of the company's distribution channels, or flowing through cuts or holes in a bund under circumstances within the control of the cultivator, will be charged the same rates as are laid down for similar cultivation supplied directly from the canal channels.

Clause 12. No charge will be made for water passed as surplus into any water-course or natural channel from which, before the construction of the canal, a first or second class crop had in time past by any means being irrigated. The position and extent of lands so irrigated and the number of crops thereon irrigated shall be ascertained and recorded, and areas and crops in excess of this shall be liable to the canal water-rate if regularly and intentionally supplied by the company.

Clause 13. No charge shall be made on any land cultivated within the preceding five years under tanks, the supply or distribution of which is necessarily affected by the canal. Additional cultivation under Government works of irrigation due to the influx of canal water shall, if such extension be within the company's scheme of irrigation, be charged for at the same rates as the other cultivation within the ayacut, the difference between the consolidated wet assessment and the dry assessment being credited to the company. The ordinary canal rates will be charged beyond that limit.

VII. As a general rule, applicants will be bound to pay for all the land applied for. In special cases where, from sudden illness or loss of cattle or other causes beyond his control, the ryot is prevented from cultivating the land, he may, at the discretion of the settling officers, be allowed to withdraw his application. If cultivation has been commenced he may be charged only for the water used. Ryots should be permitted to withdraw their applications for water, subject to subsequent approval by the settling officers.

VIII. Remission of water-rate, either wholly or in part, will be granted for failure of crops in cases where that failure is caused by excess or deficiency of water due to defect of works and shortcomings on the part of the canal administration, and not to neglect on the part of the ryots. No remission will be granted for failure of crops due to deficiency of water between the 1st January and the re-opening of the canal after the annual closing.

IX. Remissions will be granted, at the discretion of the settling officers, for rocky ground or land otherwise unfit for wet cultivation.

X. In exceptional cases, such as failure due to "choudu," excessive rains, or other cause beyond the company's or ryot's control, a similar indulgence may be granted at the discretion of the settling officers.

XI. No claim to remission for any case of loss or damage of crop shall be admitted unless written timely notice is given to the village or taluk authorities, so as to secure examination on the spot before the damaged crop is removed. The curnam will at the same time give prompt intimation of the claim to the company's overseer or the resident engineer.

XII. All applications, whether made by the ryots verbally or through the canal officers, shall be recorded by the curnam, if possible, on the same day they are received in a register (Form B), but applications to cultivate less than the minimum allowed by the rules must be refused. Cultivation, when applications have been refused or not made, will be separately registered by the curnams.

XIII. The register of applications shall be closed on the 28th of the month, and an extract thereof despatched to the taluk cutcherry so as to reach it it on the 1st of the following month. All cultivation without application should be shown at the foot of the register with the necessary remarks.

XIV. The tahsildar, or, in his absence, the taluk sheristadar, shall prepare an abstract thereof and despatch it so as to reach the collector on or before the 5th, who will forward it on to the company's chief engineer.

XV. The curnam shall further keep a book showing the detailed measurement of the area applied for. The revenue inspector should examine, during his visit to the village, the accuracy of the measurements thus recorded, and make the necessary corrections in red ink.

XVI. The register of applications kept by curnams shall be open for inspection to officers of the company, who may enter any remarks they think proper or make extracts thereof. Similarly, the curnams and other revenue officers may inspect registers kept by the company's overseers and surveyors. Where there is a difference of opinion between the curnams and the company's overseers, either in regard to damage or irrigation, the same shall be reported to the revenue inspector in view to the necessary inquiry being held on the spot.

XVII. The curnam and the reddi shall go along the irrigation channels and inspect the cultivation as often as necessary, and at least twice a month, and enter the extent in the register (Form C) kept for the purpose, with any necessary remarks regarding use of water without previous application, damage to crops, &c.; an immediate report of any damage shall be sent to the nearest company's overseer or engineer and to the revenue inspector of the range. On receipt of this report the revenue inspector shall at once visit the spot, together with the company's overseer if possible, and report the result of his inquiries to the tahsildar. In more important cases the tahsildar or sheristadar shall conduct the investigation in person.

XVIII. The curnam shall, at the close of the season, prepare an account (Forms D and D-1), showing the total land applied for, the portion irrigated, and any loss of produce from causes indicated in rules VIII., IX., and X., and submit the same to the taluk cutcherry not later than the 1st of April in each year.

XIX. The settling officers shall consist of the collector of the district and the manager of the canal, or of an officer deputed by either to act for him. They shall decide all facts pertinent to claims made by ryots for remission of water-rate due to damage done by the canal water or works, or to appeals against the rates or measurements; and shall be competent to decide on the correct amount of water-rate chargeable and on the remission thereon, and also to arbitrate, if so desired by the claimant, on all cases of claims for damage made against the canal. It shall be open to either the Government or the company, as represented by their local officers, to claim a reference of the question to arbitration, in which case the collector and the company's chief local officer shall each nominate one arbitrator, and the two nominees shall elect an umpire. The decision of the arbitrators shall be final. Where settling officers are deputies their proceedings are subject to the confirmation of the collector and the manager of the canal.

XX. Notice of the time and place of settlement of each village shall be tom-tomed through the village at least 10 days before the date fixed.

XXI. With a view to facilitate the registration of applications for water and the subsequent transaction of the company's business, 6 pies in the rupee of the adjusted gross demand will be paid by the company to the curnam and reddi of the village in remuneration for their trouble in such proportions as the collector may determine.

XXII. A table of water-rates and remissions in accordance with the above rules in English and Telugu, and a printed copy of Rules II. to XI. and XX. to XXI. in Telugu, shall be posted by the company in every village and hamlet whose land is, or will be, affected by irrigation.

Mr. Foster.—The rates paid to Government for ancient water for an ordinary wet crop, such as paddy, &c., is Rupees 4 per acre; but in the case of sugar-cane and betel leaf, which remain on the ground for double the time of an ordinary crop, the rate is Rupees 8. Dry crops irrigated pay Rupees 2 per acre. We may take it that the rent on irrigated land may be double that on unirrigated. The rent paid by the proprietor per acre in the shape of land-revenue varies from four annas to 10 rupees. There is no reason why a proprietor should not contribute to the State in return for the advantages he obtains from canals constructed and maintained at the public cost, but there is considerable difficulty in making him pay. If we charge him either extra rent or water-tax, he transfers the burden to the cultivator; very seldom does he think it worth while to spend anything on the land. The result of this is, either that the land becomes impoverished for want of improvement, or the cultivator gets into the hands of the sowcars, who derive all the benefit. It seems to me there is a marked distinction between the generality of the actual cultivators in zemindari lands and those in Government lands: from this remark I exempt those zemindaris which have been under the management of the court of wards. In the case of lands where the land-revenue is not liable to revision, I know of no other plan of obtaining payment for water but by charging a water-rate; and this, as I have said before, is sure to be transferred by the proprietors to the cultivators. Where the land-revenue *is* liable to revision I would prefer, instead of a water-tax, a fixed consolidated assessment, but I would have it revised oftener than is at present contemplated. Where the land is not charged with revenue a water-rate is the only way.

Mr. McWatters.—The irrigated lands of this district pay no separate water-cess.

Channel lands are usually rented on varam tenure. The tenant or actual cultivator pays the proprietor or Government pattadar from ½ to ¾ the gross produce. The proprietor pays the Government kist, and the tenant gets the straw. In some places the custom has grown up of the proprietor further bearing half the expenses of weeding and transplanting, which average 1½ Rupees per acre. Any little manuring that is done in the shape of scattering wild indigo, &c. over the fields is paid for by the tenant.

Channel lands are also rented for a fixed quantity of grain per acre, no matter what the gross out-turn may be.

Calculated as in the previous question, the rent value at current prices of irrigated land varies from 40 to 80 rupees per acre, and at settlement prices from 20 to 40 Rupees well lands, now classed as dry or unirrigated, and punjah or dry lands proper are rented at half the gross varam or out-turn. Punjah lands are also rented for a fixed money-rate, varying from twice the Government kist or revenue. The rent value at current prices of unirrigated land varies from 12 to 25 Rupees an acre, and at the settlement price sfrom 4 to 9 Rupees an acre. The rent value of well lands is much the same as channel lands; but this sort of land is seldom rented. These different rent values per acre may be placed side by side for easy reference:—

—	Calculated at current Prices.	Calculated at the Settlement Prices.
	Rs. Rs.	Rs. Rs.
Irrigated lands, including well lands.	40 to 80	20 to 40
Unirrigated lands - - -	12 to 25	4 to 9

The highest of these calculations is rather under what the best channels lands rent for. I notice a tendency in proprietors or puttadars lately to exact, as a rule, ⅔ the gross out-turn, probably owing to the extraordinary high prices.

The land-revenue on irrigated land is to vary according to the new settlement from Rupees 12-8-0 to Rupees 2-8-0 an acre. The existing rates are about 97 in number, and average from Rupees 1-7-2 to Rupees 20-13-0. The settlement dry rates are to vary from 6 annas to Rupees 1-12-0. There are 138 existing rates averaging from Annas 3-6 to Rupees 1-9-0.

I am decidedly of opinion that a proprietor, the value of whose land is increased by reason of a Government irrigation work, should contribute to the State for the advantage he receives.

Where the land-revenue is liable to revision the assessment might simply be enhanced; in the other two instances a separate water-rate would be the easiest way of meeting the difficulty.

QUESTION 14.—COLLECTION OF CANAL DUES. DISTRIBUTION OF WATER.

In what way, and under what law, are the canal dues recovered in your district? Has there been found to be any difficulty in applying the law in any particular, and if so, how? And what better system can be suggested? It is commonly said that water is used in too lavish a manner by agriculturists when the charge is made on the irrigated area, or otherwise than by the quantity supplied. Is this the case, and what remedies can be applied? Will raising the water-rate have the effect of preventing this? To what extent is this likely to have a tendency to throw the poorer crops out of cultivation, or to confine irrigation to the more paying crops? Is water charged for by quantity, and can this be done? Is it ever charged for on a contract system, a whole village or the proprietors or cultivators of a certain portion of the village lands paying a lump sum periodically for the water supplied to those lands through a given aperture? Is this system a good one? What are the difficulties attending it? Where it is adopted, what arrangement is made for distributing the water among the cultivators? Have complaints practically arisen where the system has been in force, and how could they best be guarded against? Does there appear to be any objection to making such a system of contract compulsory where the general advantage of the cultivating community calls for increased economy in the use of a limited supply of water?

PUNJAB.

Captain Ottley.—The law under which the demand is made and the dues collected is Act VIII. of 1873.

The manner in which the demand is ascertained and scheduled is as follows:—

The fields irrigated are noted in a book provided for the purpose, by the chowkidar (canal patrol) during the irrigating season. These books are checked from time to time by the superior native revenue establishment, and by the European officers of the division. The entries are moreover attested by the seals of one or more of the village headmen.

Towards the close of each irrigating season, a staff of amins (measurers) are sent out into the irrigated tracts; these men ascertain the area of each field which has been watered, either by means of village maps (where these exist) or by actual measurements with the chain; they also note the description of crop growing in each field. They are accompanied by the chowkidar who had noted the irrigation, the village patwárí (accountant), the lambardár (headman of the village), and the owners of the fields.

The area of the field and description of crop is entered on the spot in the field-measurement papers (khasrah); from this the demand statement (khataoni) is compiled.

This latter document contains the detail of the demand from each individual cultivator; a copy is deposited with the patwárí, and the original is sent to the deputy Commissioner and forms his warrant for the collection of the season's dues.

It should be added that a considerable per-centage of the measurements made by the amins are checked under the orders of the executive engineer by his assistant engineers, and by the deputy magistrates, and the Zillahdárs or native revenue officials. Independently of this, every complaint, whether of over-measurement or of incorrectness in the entry of the class of crop, is investigated on the spot by a superior officer.

There has been as yet no difficulty experienced in applying the provisions of the Act above referred to, and as far as the Irrigation Department is concerned the present system has been found to work smoothly and well.

There can be no doubt that, when special precautions are not taken to prevent it, the cultivators do use the water in too lavish a manner. The only remedy which at present seems possible, and which is now being tried, is a reduction in the size of the outlets, and a consequent diminution of the volume of water allotted to the area to be irrigated.

This operation, however, requires to be very carefully carried out, and necessitates very close personal inquiry by officers of experience into the requirements of the tract of country affected, in order to ensure that justice is done to the cultivators.

Raising the water-rate would have no effect on the lavish use of water, because, under the present rules, when a cultivator has taken his second watering, he may take as many more as he likes, or can get, without paying anything additional. The only effect of raising the water-rate would thus be to curtail the *area* irrigated; but it would in no way restrict the supply to individual fields.

Another method of remedying the evil complained of would be to charge for each watering; but this plan would not only entail an enormous increase of establishment, but would of necessity put far too much power into the hands of poorly-paid native subordinates, and would, moreover, largely increase the interference with the people, a step which is to be avoided as far as possible.

It is believed, after mature consideration, that the method first indicated, viz., the restriction of the size of the openings, is the only practical method of at present meeting the necessities of the case; and that it would, if properly carried out, effect the desired object.

It is not possible to say *exactly* to what extent the raising of the water-rate would affect the poorer crops; but it may be conceded at once, that the higher the rate the smaller the margin of profit to the cultivator; and hence the fewer poor crops would be grown. It is believed that any very considerable rise in the rate would confine irrigation to those crops, which require high cultivation, and that the crops, which to a great extent form the food staples of the mass of the population, would thus be left entirely to the mercy of the seasons.

At present water cannot be charged for by quantity, as hitherto it has been found impossible to measure the volume of small bodies of water with sufficient exactness. Many ingenious modules have been at different times invented, but, without exception, they have all failed in practice; they have either become clogged

with silt, or have failed to work from want of sufficient head, or from inability to deliver, even approximately, a steady supply with varying heads on the outlet.

It is also to be noted that almost all the forms which have been hitherto suggested have been far too expensive to admit of their introduction into general use.

Again, it would seem that, even if a satisfactory module were invented, it would not be possible to fix one general rate for the sale of water for irrigation purposes, as the effect of water, and, consequently, its value in maturing a crop, varies with local circumstances both of soil and climate. Special rates would have to be fixed for different tracts, and, perhaps even, in some cases, for individual villages. It may, therefore, be concluded that such a system would be found in practice too cumbrous and complicated to admit of its introduction.

The contract system of payment for water does not at present exist on any canal in the Punjab. It has, however, been tried more than once and on different canals, but has each time been abandoned for reasons which will be subsequently detailed.

From 1827 to 1833 a system of short-term (seldom beyond three years) contracts obtained on the Western Jumna Canal, but Sir William Baker states that it was found that, although the cultivators used and paid for the water in a year of drought, they refused to pay water-rent when the season happened to be favourable; the canal authorities of course claimed the water-rent under the terms of the contract, and in this way the outstanding arrears became very considerable. He also states that it was found very difficult to ascertain the irrigating capabilities of an outlet, owing to the supply in the canal increasing year by year as improvements were made.

About the year 1841, the experiment was again tried on the same canal; the contracts being fixed for 20 years on very favourable terms to the cultivators. When these contracts expired about 1861, it was found, on measurements of the area irrigated, that Government was a very heavy loser. Thus it is said that in one village whose contract had been made on the supposition that 800 acres would be the average area irrigated, it was found that over 3,000 acres had actually received water, and as the cultivators refused to take a fresh contract except on equally favourable terms it was found impossible to continue the system.

Similarly an attempt was made in 1856, by order of the Chief Commissioner of the Punjab, to introduce the contract system on the Husli Canal.

After endeavouring for two years to induce the zamindárs to accept a system of contract, the Director of Canals (the late Colonel Dyas), reported to Government as follows:—

"It will be seen that out of 440 villages, representing an annual payment (average of seven years, 1849–50 to 1855–56 inclusive) of company's Rs. 72,000, nine villages only, representing an annual payment of company's Rs. 4,294, have come forward. They offer to pay company's Rs. 3,584 only in the aggregate, or company's Rs. 710 less than the average, on the condition that the water-courses are never to be closed, or, in other words, that there is to be no 'Bundee' as far as they are concerned."

It is needless to say that a proposition of this kind could not be entertained, and the project consequently was abandoned.

On the question being again raised, in 1872, Colonel Crofton, then Chief Engineer for Irrigation, reported that in his opinion matters were not as yet ripe for a repetition of the experiment.

It is true that the fixed supply which is a necessity for the delivery of water by volumetric measurement is not required in the case of lump-sum contracts, where the contractor takes the risk, and so far the latter system is simpler; but as a contract to be of any use must include a series of years, and as experience shows that the village communities are not sufficiently educated to see the necessity for taking the bad years with the good, any contract based on fair terms appears to be at present an impossibility, although all canal officers hope that the introduction of the system may become practicable at some future date.

It seems worth while to note here that one of the greatest advantages usually claimed for the contract system is, that it would do away with the necessity for the half-yearly measurements. This view, however, is not altogether correct, and has frequently been combated in various official papers.

The following is an extract from para. 6 of Government of India Resolution, No. 28 I., dated 24th February 1868:—

"To ascertain the actual areas irrigated is, in fact, almost as necessary for a system of contract as for a system of direct charge on area, and, under all circumstances, the knowledge of the areas is required for statistical purposes."

It may also be mentioned that the views here expressed were in entire accordance with those of the late Sir Donald McLeod (then Lieutenant-Governor of the Punjab) as given in his secretary's letter remarking on the above resolution.

The following extract from Colonel Crofton's No. 60, dated 2nd September 1872, is also given as bearing on this subject:—

"8. With reference to the value of the periodical measurements, even under a system of contract payments, in distributing the charges among the several irrigators, the following statement, which I have extracted verbatim, is given in the Revenue Report of the Eastern Jumna Canal, North-Western Provinces, for 1870–71, of a partial failure of the contract system.

"'The diminution in the average number of contract outlets, from 407⅛ in 1869–70 to 83¼ in the present year, requires a few words of explanation. As far as I have been able to ascertain, the distribution of the profits among themselves was found by the zamindárs of large villages a more difficult task than they were equal to; quarrels arose, and numerous petitions were submitted to the canal officer, to the effect that the more influential men were swallowing up the profits of the contract, whilst the weaker individuals could not get their fair share. These matters, coming under Act IX. of 1859, could not be settled by the canal authorities; so in many cases they were taken into the civil courts, where law expenses further reduced their profits. Thus it happened that, when the contracts of many villages expired in 1870, those with a large number of shareholders and a large area of irrigation did not apply for a renewal.'

"Some years ago, in 1866 if I recollect rightly, when the question of measuring up the irrigation in the Dera Gházi Khan district arose, the chiefs and other influential men objected; but a large body of their tenants, who were present in camp, begged me to take their interests also into consideration, and have measurements made, assigning as their reason that they would thus have some check on the exactions of their landlords."

From what has been written above it will be gathered that any extensive introduction of a contract system is surrounded by difficulties, the chief one undoubtedly being the unwillingness of the cultivators to enter into any but a very one sided bargain, under the terms of which they *must* gain, and Government *must* lose. It is, of course, possible that when the river works are perfected at the heads of the permanent canals so as to ensure fixed supplies for the different seasons of the year, a system with this object may be introduced in some shape or other, and that it may come soon into operation is the ardent hope of every thoughtful canal officer, but, as it was remarked by Colonel Crofton in 1872, so it may still be said, that the canals are not yet ripe for the system.

The complaints which have been made during former trials, that the richer and more influential landowners have benefited at the expense of their poorer and weaker neighbours, can, it would seem, only be guarded against by a retention of the present system of constant

supervision, which includes the patrolling and subsequent measurement of the area irrigated, in order to ascertain with the greatest exactness the incidence of the charges for water; and it may be noted that, even at the present time, one of the greatest difficulties a canal officer has to contend with is the equal distribution of the water to rich and poor alike, especially when the supply falls short of the demand.

In short, it may be said that the experience gained under the system at present in force, in which the water is practically not so much restricted as it probably would be under a contract system, leads to the conviction that equitable distribution of the water can only be obtained by the constant supervision of the canal officer, as above described; unless, indeed, the villagers would agree to entrust these duties to some of their own number or to some independent and qualified person. Their distrust of one another is, however, so great that there seems to be but small probability of their accepting willingly such a change, for some time to come at any rate.

It must also be remembered that it is precisely the minute supervision of the area irrigated which entails the entertainment of a large establishment whose duties are for the most part confined to thus watching and measuring the fields irrigated; and if this establishment must be retained under any system of contract, such system would at once be deprived to a great extent of the advantages which are usually supposed to attend upon its introduction.

As regards the question of making the contract system compulsory, it may be said that it does not, at present at any rate, appear desirable to force such a system on the people in opposition to their wishes, and that it is considered that it should be introduced only with the full consent of the cultivating community; the remedy for the lavish use of water must be looked for in the meantime in the manner previously indicated, *viz.*, in the restriction of the size of the outlets and the consequent diminution of the supply of water available for irrigation in each village.

Major E. C. Corbyn.—The canal dues in this district are not recovered under any law, merely under the authority of the Financial Commissioner's No. $\frac{8}{1894}$, of 18th May 1876. It is realised in this way: after ascertaining the extent of land irrigated, the amount to be realised on it is intimated, through the patwári, to the proprietor, and is paid in by him in the same manner as the Government demand on his land. No difficulty has been experienced in realising the water-rate in this manner, and no better principle can be suggested. It is not found that water is used in too lavish a manner by agriculturists in this district on account of the charge being made on the irrigated area, as the value of water is thoroughly appreciated in a district like this, liable to prolonged drought; and the water is supplied in turn, according to a roster which is carefully kept up, so that as soon as one proprietor's land is fully irrigated his neighbour is on the look-out for his share, and he is quite as vigilant as the Government officials to prevent any waste of water. It will be seen from this that it would be impolitic to raise or interfere in any way with the present water-rate. I am very adverse to realising water-rates on crops, as it has a very demoralising effect on the proprietor, and often leads to fraud, and sometimes to loss by the proprietor as well as to Government. I would, in regard to inundation canals, advise adhesion to a fixed water-rate as the most equitable system of realising a water due, and most satisfactory to all concerned. I entirely deprecate the system of water being charged for by quantity, as it arms unscrupulous and underpaid officials with a terrible arm for oppression, and opens door for fraud and peculation. I have no experience as regards a contract rate, and must, therefore, be silent; but I should say, in a district like this, it would not answer.

Mr. O'Brien.—Canal dues consist of (1) labour assessed on the irrigators; (2) fines on absentees from the works; (3) cash payments to establishments. The labourers turn out at the summons of the deputy Commissioner.

The fines and payments for establishment are collected in the same way as the land revenue. No law exists for either calling out the labour or levying the fines. The practice is a bequest from former Governments. The system is bad, because it rests on no legal basis. The irrigators might refuse at any time to supply labour, or to do a work which the deputy Commissioner thought necessary, and the whole would break down hopelessly. The pressure necessary to make the irrigators supply the amount of labour necessary often takes very objectionable forms.

I should like to see the whole matter placed on some legal foundation, the forced-labour system abolished, and canal rates paid in cash. Cash payments would be unpopular only because the present system is so old, and because the change would be an innovation; still it could be done gradually. The agriculturists are very lavish of the canal water, and there have been many complaints of their injuring roads by allowing water to escape from their fields so as to impede traffic.

Mr. Tremlett.—Hitherto the Muzaffargarh system has been, that each canal had a list of contributaries, whose lands are entitled to be irrigated by it. There is a small panchyát of managing members, who, under the supervision and final orders of the revenue authorities, fix the number of day labourers who would be needed to clear the canal. These labourers are divided among the contributaries in proportion to the land revenue they pay. If they furnish this quota of day labourers well and good; but for the number not supplied a fixed sum per labourer is charged, and credited to a special canal fund, out of which hired labour is paid and improvements are effected. Casual works and improvements during the season are effected in the same way. These payments for non-supply of statute labour are recovered by the tahsíldárs like land revenue, and, so far as I remember, without any coercive measures beyond occasional sales of chattels; in cases of real poverty, postponements or even partial or total remissions being readily granted. It is, however, now the fashion to discredit this system of statute labour, which doubtless has defects; and I believe it is in immediate contemplation to abolish it, and substitute for it another, which I hope will make up in other ways for its greater costliness.

Mr. Roe.—The owner's or water-advantage rate is a fixed charge, and is collected as a part of the ordinary land revenue. The occupier's or water rate is paid in kind by "cher" labour; chers failing to attend have to pay 8 annas a day as commutation or fine. A list of absentees is sent by the canal officer to the deputy Commissioner, who collects the money as an arrear of revenue. One or two improvements in detail have been suggested at the present settlement, but there is no difficulty in working the system generally, nor is there any difficulty in the system of village assessments. Disputes about the right to take water are very rare. Those which do occur are settled by the canal officer under section 68 of the Canal Act (VIII. of 1873). I have not known any instance of a suit being afterwards brought in the civil court to set aside this decision. It would be absolutely impossible to charge for water by quantity.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—Canal dues are recovered in North-Western Provinces and Punjab under Act VIII. of 1873; the assessments are made by the canal officers, and realisations effected by revenue officers, subject to appeal under certain conditions. I have never known of any difficulty in applying the law, and I am strongly in favour of the existing system.

I admit most readily that water is very frequently used in too lavish a manner by cultivators under the present system of assessments on irrigated areas, but think that incorrect and exaggerated ideas prevail regarding the amount of canal water actually given to the crops, loss by percolation in main and distributing channels being by most people set down as wasted in the field. The best remedy against wasteful irrigation would, of course, be to charge by volume consumed; but the practical difficulties in the way of working a water meter in ordinary canals of irrigation (want of "head" and clogging by silt) have not as yet been successfully overcome. Irrigation by lift is always economical, so far as amount of water given to the crop is concerned; but it would lay a very heavy burthen on the cultivating community and check extension of cultivation most seriously if a canal were designed so as to afford only "lift" irrigation; and the loss by absorption in a long trench, at the further end of which a couple of men may, perhaps, be ladling out a mere dribble of water, is very great in light soil. In some cases, where the size of the outlet at the water-course head has not been fixed in the first instance with sufficient consideration, economy of consumption would result from reducing its area. But it would be a mistake to suppose, as some do, that mere reduction in size of outlet would, in every case, produce economy of consumption, *except by actual reduction of area irrigated.* There are few more wasteful methods of irrigation than by "wire-drawing" a tiny streamlet of water over large areas of land (see remarks on this subject in answer to question 27). The argument in favour of such a measure from great economy of well irrigation would only be sound and valid in cases where canal irrigation lay as close to the distributary as well irrigation lies round a well; and if we were to multiply our distributaries so as to bring all irrigation within a distance equal to the radius of economical irrigation from a well, the cost of maintenance would be prohibitive. Raising the water-rate will restrict irrigation to superior crops and soils; but so long as system of assessment on irrigated areas is maintained will not check wasteful irrigation *when the water is taken.* Taking the Indian climate, as we find it established by nature, and our system of canal irrigation as we find it limited by physical and economical considerations, I think that, where it is not practicable to charge by volume of water supplied, economy of consumption will be much more powerfully induced by very strict limitation of the *time* during which the water is supplied than by reduction of volume or by raising the water-rate. What we want to bring about is watchfulness and carefulness on the part of the cultivators; and a man is much more likely to look carefully after the distribution to his fields of a good strong stream of water for a short time than after that of a feeble rill which may take a whole day or more to cover his field, if it ever gets there at all. In the case of canal flow irrigation the anxiety to save labour in lifting does not operate as a check on waste, as it does in the case of a well. The extent to which high water rates will throw poorer crops and soils out of influence of canal irrigation must depend entirely on amount to which water-rates are raised and on prices current. There is one effect of high rates, both on the canal revenue and amount of food produced, which I may point out. Water is, especially during the "rabi," often given to improve the yield of a crop. The cold weather rain may have been scanty or ill-timed, and a watering from a canal would increase the yield per acre to the value of Rs. 3, say; with "rabi" water-rates at Rs. 2, the watering will be freely given, with rates at Rs. 3 or 4, it will not be given, and the difference to the cultivators and the State, when thousands of acres are involved, will be very considerable. This is no hypothetical effect of high rates; even with existing rates our irrigation is constantly checked in years of fair rain and low prices by considerations such as those set forth above.

I know of no instance in which water for irrigation is charged for by volume. On the Eastern Jumna Canal water is supplied for irrigation to a small extent on contract. The system has the advantage of enabling Government to dispense with annual measurements of areas irrigated for purposes of assessment. Measurements would still be needed for statistical purposes. The contract system would never induce economy of consumption in same measure as issuing water by volume. In the latter case the ill effects of waste are directly brought home to a cultivator by an increased demand; in the former a fixed sum is paid annually, and economy should be effected by making the allotted share of water cover more ground. But the "more ground" is most probably not to be found, or belongs to other people than the contractors. My experience of contracts was that the contractors would only strike a bargain on terms *most* favourable to themselves, and then considered themselves in duty bound to use as much water as they possibly could. I never received any complaints about distribution amongst cultivators of a contracting village, the people making their own arrangements, to their own satisfaction apparently. A system of compulsory contract would, in all cases, greatly simplify assessment and collection of canal revenue, and, where the demand for water is in excess of supply, would induce economy of consumption also. But it would not, I fear, be nearly so popular with the villagers as the present system, unless the contract rates were pitched so low as to entail a considerable loss on Government. At present the cultivator pays according to the demand of the season, and the Government strikes the average, balancing losses of one year against the gains of another. But in a contract system the cultivator would have to strike the average, which he is eminently unfitted to do. He would fling away the gains of a good year and howl for remissions in a bad one, or else get deep into his bunniah's books. Under a contract system, too, where demand is in excess of supply, the savings in cost of measurement would be fully counterbalanced, if not exceeded, by the necessity for increased outlay on improved means of regulation and establishment for control of water supply. At present we keep our expenses as low as possible, and do the best we can for the money laid out, but the universal adoption of contracts on a canal, especially if the rates were maintained at an average fair to Government, would entail greatly increased responsibilities in distribution.

Board of Revenue.—The canal dues are recovered in these provinces under the North-Western Provinces Canal and Drainage Act (VIII. of 1873). The mode in which they are collected is well described by Mr. Sladen, Collector of Sahâranpur: "The khasra, or "register of measurement, is the basis of demand and "of statistical returns. This khasra is prepared by "a canal amín under the supervision of a zilidar. "On completion of measurement of a village, the amín "prepares a register of assessment (khatiauni) in "which all the entries concerning each cultivator are "brought together and totalled. These khatiaunis, "after being checked by canal officers, are sent to the "collector, by whom collections are made, through "lumbardars, and they receive an allowance of 3 per "cent. on sums paid within eight weeks from date of "receipt of the khatiaunis. Any subsequent altera-"tions in the demand is communicated by the canal

" officer to the collector. What generally happens, " practically, is that the patwari makes the collections " and keeps accounts of such privately, the lumbardar " being either too illiterate or lazy to give himself the " trouble. No regular form of *wasilbaki* account " for collection of canal rents has ever as yet been " prescribed. Each collector has probably some " different form of his own, and this is an omission " which I have noticed in my reply to the circular " inviting criticism on the patwari rules."

Mr. Anderson.—Water is not charged for by quantity, nor can it be attempted until the full duty per cubic foot of water is known, and this will not be for years to come yet.

(9.) A contract system was tried on the Eastern Jumna Canal, and at one time 40 per cent. of the water-rates were so assessed; but there were so many difficulties in the satisfactory settlement of rates, distribution of water, amongst the people themselves, that the system has all but been abandoned. For particulars see revenue reports from 1859 to 1876.

(10.) As the people requiring water object to it, the system may be said to be not a good one.

(12.) The cultivators were allowed to settle the question of the distribution of the water.

(13.) Complaints have arisen; doubt whether they could be guarded against.

BENGAL.

Colonel Haig.—We have had a special Irrigation Act since 1873. On the whole, it has worked well. No difficulty has been found in its application. It has greatly checked illicit irrigation in Orissa. Canal (irrigation) dues are treated under the Act as the same as land revenue, and are recoverable by the same summary process.

The only effectual way of checking the wasteful use of water appears to be to sell it under such rules, and at such rates, as to offer a strong inducement to the regular irrigation of the whole area in each village, for which the canals furnish a sufficient supply if economically distributed. Serious waste is not possible under this system. We hope that the five-year and three-year leases, which render obligatory the irrigation of the whole, or of a fixed proportion, of the irrigable area, will work satisfactorily in this direction. In the case of leases of this description, the total assessment of the village becomes a lump sum, which is payable every year during the continuance of the lease, so long as the water-supply is sufficient. But the test of the sufficiency of supply is not the discharge through an outlet, but the crop raised. If the lessees can show a bad crop, and can prove that it is due to deficient supply, they will be entitled to remission of rate, either in whole or in part.

As to compulsory contracts and compulsory rating in any shape, so far as our experience now goes, it is not likely to be so remunerative as a voluntary system based on moderate rates and gross irrigable areas (as in the case of our five-year rice leases). It is pretty certain that we actually raised a higher revenue last year under a voluntary system, with Rs. 1-8 rates, than we should have done under a compulsory, with a one-rupee rate, which is the highest that could have been imposed. The manner in which the five-year and three-year leases are now being taken up seems to confirm the above conclusion.

BOMBAY.

Mr. Hughes.—Water-rates on irrigated land under our new works in Guzerat and the Deccan are recovered by the collectors in the same way and at the same time as the instalments of land revenue. Power is reserved to the Governor in Council by section 29 of Act I. of 1865 to assess on account of water from works constructed by Government, and Government consider that this fully provides for the levy of water-rates under Act I. of 1865 and Regulation XVII. of 1827.

No difficulty has been found in recovering dues for water-rates except in the case of inamdars, to whom the powers above referred to do not apply. A case in point is described in para. 478, Part I. of the Revenue Report.

Special legislation to meet this case is requisite. In the meanwhile orders have been given that inamdars are not to be allowed water except under an agreement to pay the amount that is chargeable for the same.

We have no experience to show that water is used in too lavish a manner when the charge is on the area irrigated, irrespective of the quantity supplied. As a rule the supply, except for perennial irrigation, is at present so large in proportion to the demand that the question has not arisen.

The system at present practised in Guzerat and the Deccan on our new works, it will be understood, is that of charging certain fixed rates on the area actually irrigated each season, which is ascertained by measurements or by inspection of the survey numbers where they have been subdivided for the purpose (vide paras. 281 and 282 of the accompanying Revenue Report). This system, apart from the additional trouble it involves, would appear to be in every way the most suitable, at any rate at first, where irrigation is not understood and the people are very unenterprising and unintelligent.

An alternative advocated by Colonel Fife, whose opinion is entitled to the greatest respect, is the distribution of the available supply in proportion to the area irrigated or the demand by each village. Taking a canal in Khandesh, which has been in operation for some years, for example, he proposed that it should first be determined how much water is ultimately to be passed off into each village channel throughout the whole length of the canal, making due allowance for any new channel which may hereafter be necessary. The people of any village to which it was intended to sell the water were then to be told the quantity of water to be passed into their channel, arrived at as above, and that with good management it would suffice for certain areas of perennial, rabi, and rice, and other monsoon irrigation. An agreement was then to be taken from them to pay a fixed sum for the year for it, and the canal establishment were to take care that it was passed from the canal into the channel. The distribution of the water after it leaves the canal was to be arranged for by the people themselves. Each village channel would in fact become like one of the ordinary pâts or watercourses led from the rivers, which are so common in Khandesh.

Colonel Fife admitted that to attempt to introduce he sale of water to all the villages at once would probably result in failure, and to be successful the plan must be thoroughly understood by all, and some at least of the villages are very backward. He suggested, however, that the plan should be tried experimentally with one of the best villages as a beginning.

As regards the measurement of the water, it should be explained that the village channels on the canal in question are each furnished with a masonry head

CH. IV. QN. 14.

BOMBAY.

sluice or regulator, which is designed to admit of a measurement of the discharge being made. It consists simply of a sluice, opening from the canal into a masonry channel or race 100 feet long, of uniform section. The discharge can be regulated by raising or lowering the sluice, and the quantity can be gauged by multiplying the velocity along the masonry race by the sectional area.

In accordance with Colonel Fife's suggestion, the proposal was explained to the people on the Jamda Canal, and after some delay one village came forward and offered to take water for 40 acres, paying at the rate of Rs. 6 per acre, on the supposition that not more than one-fourth, viz., 10 acres, should be sugar-cane. This offer was accepted. The conditions of the agreements executed were, on the part of Government, that they would supply the requisite quantity of water; on the part of the people, that they would pay the fixed rate on the area named in two instalments, and that if by economy they were enabled to irrigate, with the quantity of water allowed to them, a larger area of kharif or rabi (excepting only sugar) they were at liberty to do so without extra payment. They also agreed to keep the channel clear. The agreement was for one year. This was in 1876–77. The result of the experiment was so far satisfactory that the same village applied for water on the same terms for an area of 65 acres in 1877–78, or an increase of 25 acres, but none of the other villages are at present willing to adopt the system and they do not appear to understand it yet.

This system relieves this department of the necessity of annual measurements and of all minor distribution, and would considerably reduce the expense of maintenance. It also seems to me that if the people *could* be brought to properly understand the system, it would become extremely popular. I believe that one cause that deters people from irrigating the poorer crops is the fear that at the next revision of the settlement the lands for which they have taken water will be permanently assessed as bagayet rates. The measurement of the areas, and the careful record kept of the survey numbers irrigated, doubtless tend to confirm these fears, whereas the system of selling the water at the canal bank must, it seems to me, tend to reassure them on this point; also the arrangement is more or less of the nature of a bargain, and leaves to the people the chance, at least, of a margin of profit in which the sirkar does not claim a share. This, too, it seems to me, must commend the system to the people.

As long as the system is practised in only one village and the supply of water in the canal is greatly in excess of the demand, there are of course no difficulties attending it, but if it extends considerably, there will be difficulties in regulating the discharges during different seasons under varying heads. During the monsoon there can scarcely ever be any difficulties, owing to the abundant supply in all the canals fed from rivers with ghat catchments. From the conclusion of one monsoon to the beginning of the next the supply gradually diminishes, and it would be necessary to lay down the average discharge for each channel for each month. This, too, would vary each season, and it would be long before people were able to arrive at an average on which they would frame their estimate of the value of the supply.

MADRAS.

MADRAS.

Mr. Thomas.—Wastage of water.—In connection with irrigation, the wastage of water under our present system of charging for its supply is a subject the importance of which can hardly be exaggerated. Economy of water is, in effect, the increase of the area cultivable by irrigation. I believe that economy alone might be made to increase the irrigated area from 50 to 100 per cent. There is no economy so effective as self-interested economy. To obtain this, I would sell the water by the cubic yard, and not by the acres irrigated. On this point I will again quote from one of my previous letters when collector of South Canara, 24th November 1869, No. 1507:—

"There is also another point on which I would venture to make a suggestion. The water-rates proposed are in no way proportioned to the amount of water used, but to the acreage to which it is supplied; consequently, a ryot that has once paid his Rupees 4 or Rupees 3 an acre for water has no inducement whatever to be economical in his use of water, but simply to get as much as ever he can for his money, and consequently to waste it, for his crop is the better for standing in running rather than stagnant water; and as he has no advantage whatever from using less water, he perforce always grows the most profitable crop, viz., paddy, whereas, if he could have a less quantity of water at a less total though equally proportioned cost for the same acreage, he would often grow raggi, cholum, Indian corn, vegetables, or other things, by which the land also would have the advantage it now, necessarily, never has, of a rotation of crops; and this he would be particularly disposed to do whenever, from a shortness of supply in the tank, there might be some uncertainty as to its being sufficient to carry the later-sown paddy quite to maturity, and his economy of water in this respect would tend to the security of the other crops as well as his own advantage, for the dry grain crops raised with the aid of just a little irrigation are particularly fine ones.

"It seems to me unfair when the supply is precarious to divide the risks, as it were, by charging the ryot Rupees 3, instead of Rupees 4. Our irrigation arrangements are strictly a contract, under which the Government undertakes to supply the water necessary for a crop, and the ryot in return pays the value of it, and has no option of refusing to pay, for if the water in the tank is sufficient he gets no remission, for neglect to cultivate is presumed, and only in the case of the Government supply failing is he entitled to remission, the principle being that, if the Government failed to fulfil its part of the contract, it cannot exact the other part from the ryot.

"Furthermore, if less water than is necessary for a crop of rice is supplied for Rupees 3, it is a mockery; if more than is sufficient is supplied for Rupees 4, it is wasted; and if every man that pays Rupees 4 wastes one-fourth of his water, how great must be the total waste. That, in practice, it really is so, every revenue officer will, I think, agree with me how much more advantageous it would be to economise that waste for other fields."

Lieut.-Colonel Mullins.—Law for recovery of canal dues.—Lavish use of water, &c.—The land assessment and the water-rates also are levied by the revenue officers, and the canal officers have nothing to do with the matter.

Canal officers are able to secure reasonable economy of water under the canals of the modern systems of irrigation. There is much and sometimes enormous waste in the case of old river channels, and the Calingaroyen channel in Coimbatore may be cited as an instance. There the ryots do pretty much what they please, and the supply of water actually admitted to the channel would suffice for the irrigation of three times the area now irrigated, were reasonable economy enforced. As a consequence of the waste, which is gross and palpable, the lands under the lower part of the channel are very badly supplied. Public-works officers have so far been able to effect little or no improvement, because—

(1.) The channel is under the control of the revenue officers, and no control is enforced; and

(2.) The ryots have as many openings, often without sluices or proper means of regulation, in the channel bank, as suits their convenience.

Water has never been charged for by quantity or volume for the irrigation of land. It could not be so charged for without a radical change of system, because—

(1st.) Ryots do not know what quantities are required for different kinds of crops;

(2nd.) The same crops require materially different quantities when the soils vary.

It would be a difficult matter to teach the former, and the means of deciding the latter are not at present available. No ryot, and, indeed, none but canal officers, have any idea what a cubic foot a second, or any other volume, means. It may be assumed that 200,000 cubic feet of water are, on the average, ample for an acre of rice; and if 4 Rupees be the water-rate per acre, it would follow that 50,000 cubic feet a rupee would be the ordinary charge by volume. Were it practicable to introduce the system at old works, it would undoubtedly pay to do so, as there the wastage is great. It would not answer to introduce it at the Godavari, for there a considerably less quantity suffices, and year by year, as the distribution arrangements have been improved, waste has been reduced, and the duty of a cubic foot a second increased.

It would not do to make a system of supply by volume compulsory as regards existing irrigation, for the introduction of any system which the ryots could not possibly understand would occasion well-founded dissatisfaction. It might be introduced at new canals or new reservoirs, but only by selling to capitalists or men of education and practical agricultural experience combined, who would be willing to take large quantities on highly favourable terms, and to see to the detailed distribution. Where canal officers have reasonable powers of control, waste can be prevented without injury to individuals. Consequently, the easiest remedy for waste is to give such control to them where, as in the case of old works, it is not now present. There then would be no advantage in resorting to another system, which would inevitably be very unpopular unless middlemen were introduced, and then unprofitable.

Major Montgomerie.—The assessment and collection of revenue from all irrigation works throughout the Madras Presidency is carried out by the Revenue Department, without any reference to the Public Works Department, except in the Kistna and Godavari districts, where it is understood that the necessity for remissions is sometimes referred to the canal officers for their report.

Water is certainly used in a most lavish manner, especially in the older irrigation works. To sell water according to the quantity taken would, no doubt, prevent this waste; but to do so would be very expensive and distasteful to the people, as interfering with what they have long considered their rights, and quite impracticable without an entire change in the canal administration at present existing.

Supply by volume is, no doubt, suitable when a limited quantity of water is required for the irrigation of what are commonly known in Madras as dry crops; but it must be remembered that rice or paddy is the principal crop irrigated in Madras, and that as long as water is available no other crop is likely to be grown on the paddy fields. The quantity of water required to mature a crop of rice is very considerable, and is estimated at from two cubic yards per hour per acre, where large areas are irrigated, to as much as eight or 10 cubic yards per hour per acre. Where only small areas are supplied, large orifices are consequently required to pass sufficient water for rice cultivation, and the prevention of waste becomes all the more difficult.

Mr. Foster.—Canal dues are recovered in the same way as arrears of revenue under Madras Act VII. of 1865. There has been found no difficulty in applying this law.

It is true that water is used in too lavish a manner when the charge is made on the irrigated area, or otherwise than by the quantity supplied. Raising the water-rate would not have the effect of preventing this; nor is it easy to say what remedy could be applied. It might be possible to make a reduction in the rate for people that applied for water every other day instead of every day, and by that means induce economy; but such a plan would be difficult while the notions of honesty of the people employed in distributing the water remain as they are at present.

I do not think that raising the water-rate would have much effect in throwing the poorer crops out of irrigation, and in confining irrigation to the more paying crops; for the people have already had time to find out which lands are best suited for each kind of crop and the rate of water-tax would not affect this. Irrigation itself *has* had the effect of throwing the poorer crops out of cultivation; but the result is, in the delta, to make the people live on the better crops, and to be able to procure them.

Water is never charged for by quantity; it would be impossible to do it in ryotwari lands, but I do not think it would be difficult to do in the case of whole villages or blocks of villages, for which the proprietors pay the water-rate. In these cases, I think it would be possible to measure the water entering the village, and then leave it to the proprietor to distribute.

In one zemindari of this district the proprietors pay a lump sum for the water supplied to them. I cannot say that I think the system is, on the whole, a good one. I am of opinion that the estate gets an unreasonably larger quantity of water than it pays for. If the system were to be that the zemindars should compound for the whole water entering their lands through a particular aperture, I think the system would be good. The present system, by which the amount of composition is fixed by the area that we know to have been cultivated in former years, I do not think very advantageous to Government. We have no accounts to show what is the extent of land cultivated in zemindaris, and we cannot fix the amount of composition properly in this manner unless we have trustworthy accounts showing former cultivation. Where the contract system is adopted, the proprietors themselves arrange for the distribution of the water. I think that a scheme might be introduced for making compulsory the system of contract in the case of large blocks of land where the water can be measured where it passes through a given aperture.

QUESTION 15.—WATER-RATE IN RELATION TO CULTIVATOR'S MARGIN OF PROFIT.

CH. IV. QN. 15.

Having reference to the margin of profit on irrigated crops commonly left to a cultivator after payment of the existing water-rates, could these rates be increased without trenching unduly on that margin of profit? How would raising the water-rates operate on a cultivator under a lease, and how on the revenue-paying proprietor if it took place during the currency of the lease or settlement respectively?

Ch. IV. Qn. 15.

PUNJAB.

Punjab.

Captain Ottley.—It is believed that, taken as a whole, the rates at present in force could not be raised to any great extent.

Attention has been directed to this subject in this Department, and it is probable that some minor changes will be made; but considering the effect which a change of rates always has in unsettling the minds of the cultivators, and with special regard to the unfavourable seasons which have recently been experienced, it has been deemed desirable to postpone this question until matters are more settled, the more so as it is believed that such changes as are in contemplation will not appreciably affect the revenue of the canals.

Mr. O'Brien.—The supply of water in the canals of this district has been, in consequence of the neglect of the canals, very precarious, and I do not think the contributions of labour or cash could safely be increased at present. The canal administration has been temporarily improved lately, but not permanently. If the improvements were permanent, and the people became able to trust in a regular supply, the contributions might easily be increased. At present canal irrigation is deservedly mistrusted. Canal dues are almost invariably paid by the tenants, and, if they were raised, I imagine the tenant would continue to pay them till they grew so heavy as to make him throw up his tenancy.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

Board of Revenue.—Questions similar to those discussed in the Commission's, No. 15, (Irrigation Works,) were raised by the Government of India in their No. 725, dated 27th September 1877, with reference to the proposal of the North-Western Provinces Government to raise the water-rates for flow-irrigation on the Ganges and Eastern Jumna to the level of those imposed on flow-irrigation from the Agra and Lower Ganges Canals.

Special inquiry into the subject was made by the Board, under the orders of the North-Western Provinces. The officers of canal-irrigated districts were consulted, and full statistics regarding the rent-rates of land irrigated from canals (flow and lift) and wells were obtained from them. It was ascertained that water-rates had been raised, and the rise in the water-rate had not been followed by a change in rents. It was proved that the heavier or lighter incidence of the water-rate in no way affected the rent-rate by the fact that, notwithstanding the higher flow water-rate, the rent-rate of flow-irrigated land was generally identical with that of lift-irrigated lands; while, as often as otherwise, the rent-rate of lift-irrigated land, when the water-rate was lower, was higher than that of flow-irrigated land. It is notorious that well-irrigation is far more expensive than canal-irrigation, and yet, as a rule, the canal-irrigated lands are not more highly rented than those irrigated from wells. Where canal-irrigation is introduced for the first time, the rent of land hitherto dry is raised to the level of the rents ruling on lands which are irrigated from wells. No calculation is made of the cost of irrigation. The prevailing rate, *e.g.*, for unirrigated 1st-class dúmat, is Rs. 2–4–0 per bígha, and of the same soil irrigated from well or jhíl Rs. 4–0–0 per bigha. Canal-irrigation is introduced. The customary rent of irrigated dúmat, 1st class, being Rs. 4–0–0, the rent of the land hitherto dry and now irrigated from the canal will be raised up to the level of that of well-irrigated land, whether the irrigation from the canal be "flow" or "lift," the entire charge for the former, supposing wheat be the crop, being Rs. 2–4–0 and Rs. 1–8–0 per acre, and quite irrespective of the fact that well-irrigation is more costly than canal-irrigation.

There can be no doubt that existing water-rates could be raised without trenching unduly on the margin of profit annually left to the cultivator, provided that the enhanced water-rate plus the cost of distributing the water is not greater than the cost of well-irrigation, and the rent-rates on canal-irrigated and well irrigated land are, as has been proved by careful inquiry over many canal-irrigated districts, to be identical. Of course the line must be drawn somewhere. The 1st-class flow-irrigation might be raised from Rs. 5 to Rs. 7, and in the case of some crops doubled, without trenching unduly on the cultivator's profits. That the existing water-rates may be enhanced without risk can hardly be doubted after a perusal of Mr. Wright's estimate of cost of production with—(1) well, (2) canal lift (one lift only), (3) canal flush, irrigation, and of amount and value of produce and of profits. The profits shown below for the crops, which are more generally watered for the Cawnpore district:—

Crops.	Profits when the Land is irrigated from		
	Wells.	Canal by one Lift.	Canal flush.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Indigo - - -	6 0 0	20 0 0	24 0 0
Maize - - -	9 14 0	16 0 0	17 12 0
Wheat - - -	16 7 0	28 4 6	31 2 6
Bijhra (barley, gram, and peas mixed) -	12 1 0	18 11 0	20 7 0
Poppy - - -	8 13 0	22 5 0	26 1 0
Sugarcane -	21 8 6	53 9 10	62 1 6

Mr. Webster considers that a small enhancement of the water-rates at present in force on the Ganges and Jumna Canals might fairly be made, and that, as far as his experience goes, the water is now sold to the cultivator at a rate so very much below that which well-water would cost him that he profits unduly from the irrigation supplied by the State.

Raising the water-rate during the currency of a lease would diminish the profits of the cultivator by the difference between the old and new water-rate, but whether it would unduly trench on the cultivator's profits depends on the profits he enjoys. If he is rack-rented and left too small a margin of profit he may be unable to pay an enhanced water-rate. In that case the landlord must either lose his tenant, whom he will not be able to replace, or abate his rent. Government is entitled to a fair price for its water (the cultivator in paying water-rate virtually buys the water). It is not right that the Government should be precluded from obtaining a fair price for canal water by raising the water-rate when that rate does not represent the fair price, by the fact of the landlord appropriating more than a fair share of the tenant's gross profits. As for the effect on the revenue-paying proprietor, enhancement of the water-rate during the currency of the settlement would affect him only where he was compelled to make an abatement in the event of the rent hitherto paid being so high that the tenant could not afford to pay the enhanced water-rate from the profits of his cultivation, or the enhancement was so great as to forbid cultivation with the aid of canal-irrigation being sufficiently profitable to be continued even where the rent demanded by him was only fair and equitable. As Mr. Webster puts it, "such an enhancement" (raising the water-rate), "whether it "fell upon the proprietor or upon the cultivator, "would only be reduction of the surplus over and "above a fair profit which one or the other has "hitherto enjoyed at the expense of the State."

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—The limit to which water-rates can be increased in any given locality depends entirely on nature of soil and climate, amount of population, cost of cultivation, and prices current. I think that for the present it would be very unwise to go beyond Agra Canal rates in the North-western Provinces.

BENGAL.

BENGAL.

Colonel Haig.—Existing water-rates in Bengal could not be raised at present, nor probably for many years to come, unless there should be a considerable and permanent rise in the price of agricultural produce.

BOMBAY.

BOMBAY.

Mr. Propert.—The crop rates on the new canals and tanks have been purposely fixed at a low figure in order to induce irrigation. They could certainly be raised so as still to leave a fair margin of profit, but it is questionable whether it would be politic to introduce higher rates until the demand for water becomes more steady and certain. With regard to the Bombay Presidency, as the water-rates were imposed since the commencement of the 30 years' revenue-survey leases, and in addition to the ordinary land assessment, there would be no legal objection to raising them at the pleasure of Government in the case of those persons who demand water; but no compulsory water-rate could, I think, be imposed without legislation upon all lands capable of being watered by a tank or canal until the expiration of the survey leases. The same remarks apply to lands held by jahagirdars or proprietors. Of these, however, there are very few.

MADRAS.

MADRAS.

Mr. Sullivan.—(*a.*) This question, it is thought, may safely be answered in the affirmative; for, as shown above, the present water-rate of Rupees 4 is not in excess of that which it was thought equitable to impose when the consolidated wet assessment was settled early in the century, when agricultural profits were far below what they are at the present day. Taking the Kistna as a sample district, the profits per acre of land irrigated from an unfailing source are given below, the value of the crop being calculated on the average of the prices ruling from 1866-75 :—

Grain.	Produce per Acre.		Expenses per Acre.		Profit per Acre.
	Madras Measures.	Value.	Labour, &c.	Assessment, including Water Rate and Local Cess.	
Paddy -	753	Rs. 33	6·6	6·69	19·71

N.B.—The value of the straw is not taken into account, as this ought to return to the land in the shape of manure.

The only difficulty that presents itself in regard to raising the water-rate, where it is charged in addition to and separate from the land assessment, is that the districts where those conditions exist would, for some considerable time, be called upon to contribute more largely to the public revenues than those where a settlement of the consolidated wet assessment has been, or is in process of being, concluded for 30 years. Until the time comes round for a revision of this settlement no further demand can be made on the agriculturists holding under it.

(*b*). The cultivator would, of course, be bound by the conditions of the lease alone, and the raising of the water-rate by the Government would not affect him unless his landlord had inserted a clause in the lease to provide for the contingency. In the second case, as the water-rate is not dealt with by the Settlement Department, except where the assessment on irrigated lands is consolidated, the Government have the power to enhance it during the currency of the settlement, and the proprietor would have to pay it.

Lieut.-Colonel Mullins.—Increase of water-rates.—The advisability of increasing water-rates must be decided with reference to the actual circumstances of particular localities. In the delta of the Cauvery there are indications that the assessment, which is there consolidated, *i.e.*, there is no distinction between land revenue and water-rate, is remarkably low, taking the character of the water supply into account. The great increase in the value of land since the upper anicut (weir) was built upwards of 40 years ago is evidence of the great value of the private property created by that improvement, and this property has not contributed to the needs of the State. This delta, the most extensively irrigated, and, perhaps, richest, tract of country in the Presidency, remains unsurveyed; and data are wanting, therefore, for ascertaining the actual extent of irrigation or for dealing comprehensively with any questions relating to the revenue.

In districts which have been settled for a fixed period no alteration of rates can be made until the time for a fresh settlement arrives.

Major Montgomerie.—Judging from the selling value of irrigated lands in districts such as Tanjore and Tinnevelly, the margin of profit left to the cultivator must be very considerable; the best way of discovering how much the water-rates could be increased without trenching unduly on that profit would be to encourage public competition in taking up the lands on the expiration of leases; existing settlements cannot be interfered with.

Mr. Wilson.—The assessment of land in this Presidency is supposed to be the value of half its net produce.

In the deltas of the Kistna and the Godavari, where separate water-rates are imposed, it is impossible to say whether the sum of the land assessment and water-rate represents half the net produce or not, for the land assessment was calculated, not on what the land produces—white paddy, but on a dry grain standard, and the total charge on the land is this fictitious assessment, *plus* a water-rate. If the total demand on the land equals the value of half its net produce of paddy, the water-rates could not be raised without upsetting the principles of assessment prescribed by the Secretary of State for this Presidency.

The assessment of these delta lands rests on a basis so artificial and fictitious that it is impossible without

Ch. IV. Qn. 15.

Madras.

minute inquiry to say whether the water-rate is fair or too low. For all present occupation it certainly is is not too high; if it were, the land would be relinquished. An increase in the water-rate during the currency of a lease would affect the tenant according to the terms of his lease. A revenue-paying proprietor would have to pay the new rates in full, because the rates are, under Madras Act VII. of 1865, fixed at such amounts as the Government may from time to time think proper to impose, and are never fixed for any given term; water-rates are altogether apart from revenue settlements.

Mr. Crole.—The existing water-rates are too high, as already brought by me to the notice of Government.

Mr. Foster.—I take the average profit to a ryotwary ryot to be Rupees 15 an acre after paying the Government assessment and water-rate, which would be about seven or eight rupees; that is to say, the actual profit, after deducting only the expenses of cultivation, would be about Rupees 22 or 23; the margin of profit usually supposed to go by right to the ryot is half of this; hence, by raising the water-rate we should not trench unduly on the ryot's profit, but the above figures I have given for ryotwary lands. I do not feel so sure that the ryots in zemindari lands could bear much extra water-rate.

If we raised the water-rates on land cultivated by a ryot under a lease from a zemindar, the zemindar himself would really have to pay the extra rate, but he would probably find even during the currency of the lease some means of making the cultivator share it with him, and it would be very unlikely that he would renew the leases except on terms which would amply repay him for anything extra he had paid.

Major Vibart.—The land and water rates together seem to be in ordinary times about one-sixth of the gross value of crop, but at the present time the price of rice is still so high (six measures per rupee) that the land and water rate is only about $\frac{1}{12}$th of the gross value of crop.

Ch. IV. Qn. 16.

Question 16.—Preparation of Statistics.

How are the statistics of irrigation recorded, and are revenue reports of the chief irrigation works prepared by the canal administration, and in what form? Do you think them necessary? To what extent do you think the record of such statistics valuable or necessary for the proper administration of irrigation works? To what degree of detail may the record usefully go, and how may the facts be best collected and recorded?

Punjab.

PUNJAB.

Captain Ottley.—The accounts of expenditure and income are recorded in detail in the examiner's office.

They are summarised at the close of the year and furnished to the local government in the forms in which they appear in the annual Revenue Report. They consist of a general statement of income with supplementary statements of detail, and capital and revenue accounts of each series of canals under the Irrigation Department.

The examiner also furnishes an appropriation and outlay account, which is printed with the annual Progress Report.

Revenue reports are prepared annually by the executive engineers of irrigation divisions; these are forwarded by them to their respective superintending engineers, who compile reports for their circles. These reports have hitherto been printed, and have formed part of the revenue report of the Province, but in future, under recent orders from the Government of India, they will not be printed *in extenso.* They are reviewed by the chief engineer, and are forwarded to the Government of India with a resolution of the local government. These various reports are prepared in forms which have been generally approved by the Government of India. A reference to the last report published will best show the forms in use.

Monthly statements of irrigation operations are compiled in the chief engineer's office, and published in the *local gazette;* these are approximate, and are obtained from the record books of the canal patrols, whose duty it is to enter the area irrigated in their respective beats from week to week. They give, however, a fair idea of the state of the irrigation in each crop.

Half-yearly statements for each crop, and an annual statement including both crops, are also compiled and published. These are prepared from actual measurements and assessments, and are accurate records of the irrigation year by year.

Further particulars of duty done by the water, area under chief crops, proportion of flow to lift irrigation, and other details, will also be found in the annual Revenue Reports.

These reports are of great value as a record, and enable a comparison to be made of the progress of irrigation year by year.

They show in great detail the rise and fall in the canal-supplying rivers of the Province, the water supplied to each canal, and the duty derived from it, and allow officers of one circle to judge of the work done by them in comparison with the work done in other circles; and as the reports are also circulated to other provinces and administrations, the experience gained in one province is thus made available over the whole of the country.

Mr. O'Brien.—No statistics of the canals are recorded, and no revenue reports are prepared, by the canal administration in this district. No patwári's annual papers, based on local inspection, have ever been made. The figures in these answers are taken from Settlement Survey, which was made in 1873–74 and 1874–75. I suppose there cannot be two opinions as to the advantage of recording statistics of canal irrigation.

This district has 3,97,529 acres of cultivation, of which 2,09,081 are irrigated by canals. The loss to every part of the revenue administration in having no statistics of canal irrigation, when more than half the cultivated area of a district depends on canal irrigation, cannot be exaggerated. The form and detail of such statistics can best be decided by those who have had experience of recording canal statistics; I can only depose to the injury caused by not having any statistics.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—Taking the revenue reports of the Irrigation Department of North-Western Provinces, which I know best, as a standard, I think that much might be done to reduce their bulk without appreciably impairing their usefulness. I would omit all reports of executive engineers, unless of very special importance and interest, many of the diagrams of river gauges, which are needlessly multiplied, and all copies of resolutions of Government or correspondence printed in the proceedings of Government, references to which could, if necessary, be given in the report.

Mr. C. C. Anderson.—(1). Irrigation statistics are recorded by members of the canal establishment.

Revenue reports are prepared yearly, and submitted by the local government to the Government of India.

(2). Most necessary, as they record in a concise form the operations of the year.

(3). The record of irrigation statistics is the basis of progress.* Without a full knowledge of what has been done in former years it is impossible to know what should be done in years to come.

(4). The greater the detail the more likely the progress. The following should invariably be recorded :—

(*a*). Area, the unit of measurement being a field.
(*b*). Position of each field.
(*c*). Nature of crop.
(*d*). Nature of irrigation—flush or lift.
(*e*). Name of occupier.
(*f*). Name of owner.
(*g*). Source of irrigation.
(*h*). Nature of soil.
The canal establishment is best fitted for recording irrigation statistics.
(*i*). Volume carried by each line of main water-course.
(*k*). Duty done by the volume at command.
(*l*). Season and nature of demand.
(*m*). Rainfall.

BOMBAY.

Mr. Hughes.—1. The statistics of irrigation are recorded in a most complete form by the officers in charge of the works. These comprise registers of the discharge of the rivers and canals fed from them, taken daily throughout the year by a carkoon and checked at least once a week by the subordinate and occasionally by the officer in charge; statements of the areas irrigated and the nature of crops ascertained by actual measurement by a measurer on the canal establishment, 10 per cent. of whose measurement is checked by the canal officer or the canal subordinate. A careful record of the rainfall on each canal is also kept. The accounts of the various works kept by the examiner and the returns rendered by the executive engineers and collectors under the canal rules give most complete details of the capital outlay, cost of maintenance, area irrigated, revenue assessed, remissions and realisations each year.

Revenue reports of the works are prepared annually by the canal officers, whose reports are embodied in a general report for the Presidency. A copy of that for 1876–77, Part I., relating to new works, is attached. (Accompaniment A.)

2. I think these reports are necessary, and that the statistics they contain are of great value in tracing the revenue progress of a work, the causes which deter or foster improvement, and in controlling the management. The comparison of results on different works too is most valuable to individual officers, who would otherwise have no means of obtaining information of the experience on other works which might be applied with benefit to works in their own division.

3. I cannot suggest any curtailment of the detail to which the report attached goes. In future reports it will be unnecessary to repeat the description of the completed works, but information in regard to the duty of the water per cubic foot of discharge on each work will be added where possible, and will be most useful for comparison of the degree of efficiency of the management on each work, and will also ultimately furnish data for use in estimating the return from projects proposed for execution.

BENGAL.

Colonel Haig.—As regards the manner in which our irrigation reports are prepared, the best answer to this question will be one of our annual revenue reports, copies of which are regularly furnished to the Government of India. Such a record of the statistics of irrigation is essential to good administration, and I think our reports give about the requisite amount of detail. They show for each project—

The capital account.
The interest account.
The revenue account.
The areas of each class of crop irrigated during the year, as compared with former years; the receipt from irrigation, navigation, and miscellaneous sources; the working expenses, and balance, whether profit or loss.

The working expenses, which consist of—

(1) Maintenance of works,
(2) Revenue management,

are exhibited in a good deal of detail, this being a branch of the administration which requires the most constant watching. Our reports give, I think, as complete a view as can be desired of the financial position and results of each scheme. The indirect results are perhaps not sufficiently noticed; in fact, they are hardly noticed at all, but they are difficult to estimate, and usually so out of proportion to the direct returns in the shape of revenue that they are liable to be looked upon with suspicion. From time to time, however, they may with advantage be recorded.

MADRAS.

Lieut.-Colonel Mullins.—The statistics of the irrigation for which special returns are not made out are exhibited in the district irrigation registers. For the larger works or systems statements of cultivation and revenue have, in some cases, been prepared in the Revenue Department, and in others are under preparation. No revenue report is prepared by the canal administration, but the statements furnished by the Revenue Department are reviewed, and the results of successive years compared. Canal officers require

Ch. IV. Qn. 16.

Madras.

to know during the season what areas are being irrigated, and the administrative officers need to be informed what are the results of each season's irrigation, in order that all necessary improvement of management may be ascertained and introduced. Lastly, the net results have to be incorporated in the financial accounts of the works. Accurate statistics, including the quantities of water consumed in the irrigation of given areas, are of great importance, not only to the efficient management of existing works but as a guide to the probable results of proposed works.

The degree of detail should differ for the several offices.

The officer in charge of a canal should know what area is irrigated in each village; for he has to supply the water accordingly, and he has to watch variations of area, and to understand their causes.

A superintending engineer and a chief engineer require to compare by canals actual with anticipated areas of irrigation, and to watch the progress of extension of irrigation when not fully developed. They must judge for the most part by results whether the detailed administration is thoroughly efficient.

The annual reports on the season's irrigation are the most convenient place for the record of statistical information for each year; and this should afterwards be so posted up in abstract as to enable comparisons to be made for a series of years for any one system of irrigation and in due course between systems. Under the arrangements in force in this Presidency, the final areas and revenue for the year must be furnished by the revenue officers. All statistics of water supply, consumption, cost of maintenance, &c. can be recorded by the canal administration.

Ch. IV. Qn. 17.

Question 17.—Some Mischievous Effects of Canal Irrigation.

What evidence is there as to any mischief being caused by canal irrigation, such as by increasing sickness or injury to the land by raising the water-level or production of efflorescent surface salts, &c? To what extent has drainage accompanied, or ought drainage to accompany, canal irrigation? Has the provision of needful drainage been neglected? Is additional drainage needed to meet the effect of the increased quantity of water thrown on the surface, or to remove obstructions caused by canals, channels, water-courses, &c.

Punjab.

PUNJAB.

Captain Ottley.—Before replying specifically to the above questions, it appears desirable to lay down, first of all, the conditions under which it is considered that a system of artificial drainage would be required in connection with any canal project.

It will be understood that as a general rule, and by the working of natural laws, the capacity of the natural drainages of any given tract will suffice for its ordinary rain-fall. In the event of an extraordinary rain-fall, and especially if this be sudden, the drainage lines may for a time become more or less gorged and consequently unable to afford the necessary relief, so that the land will be to a greater or less extent submerged. The result will be a temporary raising of the spring levels, and possibly an increase of sickness in the inundated tract.

Now, irrigation may be regarded as supplementing the natural rain-fall; and when the capacity of the natural drainage lines is insufficient to carry off both the rain-fall and the additional amount of water spread over the surface by means of irrigation, it becomes absolutely necessary to resort to artificial remedies.

Owing to the peculiar conformation of the country over a great portion of the Punjab, the capacity of the natural drainage lines is far in excess of what is required to carry off the rain-fall alone, and it is generally sufficient for the necessities both of this and of irrigation waters.

It need scarcely be said that it is of course imperative that these natural drainages should be in no way obstructed or interfered with.

It is now a well-understood principle of modern canals that they should be aligned so as not to obstruct natural drainage channels, the same principle holding good for distributaries as well as for the main arterial lines.

Nothing further appears to be required at first in the case of new canals which have been thus aligned, but after a canal has been opened, and irrigation to some extent developed, the springs will rise to a certain extent both in the vicinity of the canal and in the irrigated tracts; and whenever it is found that the natural drainage lines are insufficient, either in number or capacity, for the work they have to perform in preventing an excessive rise of the spring level, it will be necessary to apply local remedies, but it is obvious that no general rule can be laid down in this matter.

Thus, on the Bari Doab Canal, there are no channel specially made for drainage purposes, nor have any such cuts hitherto been found to be necessary.

In some places improvements to the natural drainage outfalls have been made, and projects for one or two such improvements are now under consideration, but the necessity for a regular system of artificial drainage does not exist, and that such is the case is to be attributed to the careful alignment of the main canal and dis-tributaries.

As bearing on this subject, the following extract (para. 37) from the Revenue Report of the Superintending Engineer Bari Doab Canal Circle for 1876–77 is given:—

"37. Attention has been called to a considerable rise in the spring level, as indicated by the level of water in wells in Lahore and Amritsar.

"The heavy rains of 1875 raised the springs in all the low-lands some 8 feet to 10 feet; this was rapidly subsiding when the rains of 1876 again caused a rise; this too is now quickly disappearing, and the springs are now (August 1877) about five feet above their normal level; it is to be remarked that this rise is observable in wells situated in or near a drainage.

"The periodical observations of the height of surface of water in wells show that the wells in the vicinity of canal channels have not participated in the rise observed in wells in the lower lands."

As regards this canal also, it may be broadly said that there is no evidence of any mischief having been caused by canal irrigation either in increasing sickness or in injury to the lands by the raising of the spring level or by the production of efflorescent surface salts.

A similar statement may also be confidently made as regards all the Inundation Canals. The case of the Western Jumna Canal is, however, widely different. Here the old faulty alignment of the main canal and the absence of proper distributaries are

entirely responsible for the obstruction of the natural drainage channels and the consequent water-logging of the low-lying tracts.

The alterations of the alignment of the canal which are now in hand, and indeed in great part completed, as well as the construction of properly aligned distributaries (which will replace the numerous village water-courses now in use) will, when completed, permit the re-opening of the natural drainage lines, and this alone will in great part relieve the evils now complained of.

Where these natural drainages are known to be insufficient to carry off both the water spread over the surface by irrigation, and the rain-fall (which is more abundent in some of the tracts watered by this canal than elsewhere in the Punjab), they will be supplemented by artificial cuts, the scheme for which is now under elaboration. These artificial canals cannot, however, for obvious reasons, be constructed until the present irrigation has been provided for by the new system of distributaries.

The increased sickness in some tracts (notably in the Karnal and Delhi districts) watered by the Western Jumna Canal long since attracted attention, and special investigations into the causes and possible remedies have more than once been made.

In 1856 the matter was brought to the notice of the Supreme Government, but attention was diverted from the subject by the mutiny, so that it came to pass that action was long deferred. In the end, however, the remodelling project now in hand was sanctioned by the Secretary of State, and the work was commenced which, it is confidently believed, will within the course of a few years entirely remove the evils complained of.

It is especially interesting to note that the observations which have been made above were confirmed by the state of this country in 1877, when it was fully shown that a greater accumulation of water on the surface than the drainage (whether natural or artificial) can carry off in a reasonable time is the real cause of the evils which are usually attributed to canal irrigation, and that it makes no difference whether such accumulation is derived from canal or rain water or from both combined. The year 1877 was one of drought, and to meet the wants of the cultivators a very much larger supply of water than usual was forced down the Western Jumna Canal and spread out over the land; nevertheless all the swamps decreased in area largely, and many villages which, owing to the water-logging of their lands, had previously resigned canal water, eagerly applied for its restoration to them.

Again an inspection of the higher lands and drier tracts watered by the Bootana Branch of the Western Fumna Canal conclusively shows that there is nothing mischievous in the use of canal water if only the channels be properly aligned. It is not too much to say that, although irrigation is of very long standing in these parts, it would be difficult to find anywhere finer cultivation and a more complete absence of all the evils which are so commonly supposed to be the necessary accompaniments of irrigation from this old canal.

As regards the liability of irrigation to increase the production of efflorescent salts, it may be sufficient to remark that ordinarily such increase only occurs where the soil was originally impregnated with them to a great extent, and that it then occurs whether the irrigation is derived from wells or canals. The evil can scarcely be said to exist to an appreciable extent on the Bari Doab Canal, and appears to be even stationary on the Western Jumna Canals. It is believed that there is a general consensus of opinion among canal officers in this province, that the best way of treating such soils is to leave them alone.

It is understood that a report of a committee, assembled at Allygarh in the spring of 1877, to investigate into this subject, has been published; it has not, however, been received in this office up to date, although it has been asked for both from other Departments in this Province and also from the Irrigation Branch of the North-Western Provinces.

The following extract from Major Earle's Revenue Report of the Western Jumna Canal for the year 1868–69 may be found interesting:—

"75. In conclusion, I may observe that reh (salt efflorescence) on land about the canal, to some extent, appears to be decreasing.

"Mr. Duncan states in his report this is the case along the canal in the Karnal district, and that the land seems to be recovering itself. When inspecting the Delhi division, I observed the same down there, and was informed that much of the land that had for years remained useless on account of Reh, was now being brought under cultivation again, and I was shown some such land with a fine crop of sugar-cane on it. I can only attribute this to the attention which is paid to the draining of the country as much as possible, by either closing the canal itself, or the Rajbuhas, and passing off by means of them as much drainage water as it is possible to do.

Mr. O'Brien.—The only mischief caused by canal irrigation is that described in the reply to the questions received with your F—39, dated 13th August 1878. No system of drainage has ever accompanied canal irrigation in this district. Nothing has ever been done here except to make here and there water escapes in sudden emergencies, such as dangerous floods. Drainage is decidedly necessary, for in many parts the excess water from canals collects in such quantities as to destroy crops and cause houses to fall down.

Mr. J. B. Lyall.—In a dry rainless country like Muzaffargarh, canal irrigation seldom or never requires to be accompanied by drainage; it does not appear to bring sickness to any serious extent; the water is muddy, and its use generally tends to improve the soil.

NORTH-WESTERN PROVINCES.

Board of Revenue.—Evidence is hardly needed to prove facts which are notorious, and the existence of which is denied by no one. It is notorious, and is admitted by all, that tracts which were formerly healthy have become unhealthy after the introduction of canal irrigation unaccompanied by drainage. The Board can vouch, from personal observation, that the Ganges canal has raised the spring level of the country through which it passes to such an extent as to convert land formerly fertile into swamps. No one can ride through the canal-irrigated parts of the Aligarh, Mainpuri, Etawah, Farukhabad, and Cawnpore districts without seeing a very great development, both of swamp and *reh*, much greater than is met with in the adjoining tracts, which are beyond the influence of the canal. "A reference to Doctor Cutliffe's Sanitary Report on certain districts of the Meerut division, published in 1868, pp. 35–8 will (Mr. Sladen writes) explain the mischief caused by canals in increasing sickness."

As to the great and, indeed, only remedy for such evil, *viz.*, drainage, and the extent to which it has been, and is now being, provided, the Board are entirely in accord with Mr. Webster, from whose reply they quote:—

"The remedy for these evils is, of course, drainage, which always should accompany irrigation from canals '*pari passu*;' in fact Sir Proby Cautley, when designing the Ganges canal and its distributaries, did propose a concurrent system of drainage, which, had it been adopted, would doubtless have averted the evils which arose from canal irrigation, and which were too long allowed to work their ill effects uncombated.

Ch. IV. Qs. 17.

North-Western Provinces

"However, matters are changed now; the Irrigation Department has loyally accepted its responsibility for the damage and injury done by injudicious irrigation; and comprehensive, and, it is hoped, efficient, drainage schemes are in hand, and, I believe, for the most part, well advanced."

Colonel Brownlow.—The records of the Governments of North-Western Provinces and Punjab must contain reports both on sickness and on injury to land by salt efflorescence produced by excessive canal irrigation and neglect of drainage. Until quite lately the drainage of tracts irrigated by canals has not received the attention which it ought to have done, and the responsibility for this neglect has not always rested with the local engineers. It is difficult to lay down any precise rule as to the extent to which drainage ought to accompany canal irrigation, as it will depend so much on the nature of the irrigation and the character of the soil in each locality. Canal channels ought *never* to obstruct drainage lines, and the use of drainage courses as irrigation channels ought only to be allowed on the express condition that, on no pretext whatever, shall the free flow of water be obstructed *at any season of the year.* These fundamental principles have been too often overlooked, and clearance of drainage lines is now required for removal of artificial obstructions as well as to neutralise the effects of marked rise in spring levels which must accompany widespread irrigation from a canal.

Mr. C. C. Anderson.—(1.) There has been a cry that canal irrigation has increased sickness—it is but a cry. Dr. Moir, Civil Surgeon of Meerut, who has given much time to the question, has on more than one occasion stated that the cases laid at the door of the canals are unfounded. Dr. Moir's reports should be read.

(2.) In the older canals drainage was not so much thought of as it is now in new projects, simply because the conditions, political and sanitary, were different then than now. Drainage works are divisible into two classes:—

(i.) Works for the prevention of interception of drainage.

(ii.) Works for improving natural obstructions and keeping down spring level. The first, such as syphons, &c., should accompany the construction of irrigation works. The second should only be taken in hand when necessity arises. To illustrate the two cases—

(a.) The Lower Ganges canal is carried right across the Doab, and consequently in its course crosses five main-drainage lines. The syphons and channels required for the free passage of the waters of these drainage lines must be constructed before the canal is opened.

(b.) A depression runs more or less parallel to the Agra canal for sixty miles. The spring level is from 10 to 15 feet below the surface. If what has taken place on the Ganges and Eastern Jumna canals takes place in the country commanded by the Agra canal, it will be obligatory to run a cut down the centre of this depression. To have made the cut at the same time as the canal would have been waste of money, for if would have been dug years before it was required. It will be time enough to think of making the cut when the facts that are recorded monthly show a perceptible rise in the spring level.

(3.) The provision for needful drainage has not been neglected, as even so far back as 1828 cuts were designed and excavated by Sir Proby Cautley, then Lieutenant Cautley, on the Eastern Jumna Canal. Again, in the Ganges canal, certainly over 100 miles of cuts were dug before the waters were admitted into the canal.

(4.) Additional drainage works are needed more to meet the effect of the increased quantity of water brought on to the land than to remove obstructions caused by canals, channels, watercourses. Close the Ganges canal for 10 years, and 50 per cent. of the drainage works constructed during the last 10 years will never have a drop of water in them.

Bengal.

BENGAL.

Colonel Haig.—We have no evidence yet of any mischief being caused by canal irrigation in the shape of sickness or deterioration of soil. The paramount necessity of drainage is fully recognised, but the works for this purpose have rather lagged behind those for irrigation in Orissa. In Midnapore and on the Sone Canals both have advanced *pari passu.*

In Bengal, where almost the whole of the irrigation is khureef, the land has complete rest during half the year—and that the dry half—so that irrigation probably produces no effect whatever upon the degree of saturation of the soil or on the climate. On the Sone, half the irrigation will be rubbee, for which the water-supply is estimated to suffice for 250 acres per square mile, or 39 per cent. of the gross area. This is the very largest proportion of the whole area that can be under irrigation at one time. The country there has good slopes, and the drainage is excellent.

Bombay.

BOMBAY.

Colonel Anderson.—Too little canal irrigation in Bombay to justify any decided opinion, but in one case, below Madak tank in Dharwar, an increase of fever is alleged as a result of increase of irrigation, and on the Krishna Canal at Karar continuous irrigation with the canal water is said to damage the land. Further experience will be required to ascertain the truth of this. Both works are of comparatively recent date.

Mr. Propert.—There is no evidence as regards my own district to show that sickness, or injury to the land, by raising the water level, has been caused by canal irrigation, nor have efflorescent surface salts been produced. In the case of Khandesh the natural drainage is ample. The superintendent of the Government farm at Bhadgám considers that drainage in Khandesh would be a great mistake under any circumstances whatever.

Madras.

MADRAS.

Mr. Sullivan.—In 1871-2 it was reported to Government that fever of a low type had appeared in the Godavori district, which work was attributed to the extension of canal irrigation, and the late Surgeon-Major Wright was specially deputed to investigate the matter. That officer's report is not at the moment available, but it is known to the undersigned, who was at the time collector of the district, that Mr. Wright, after very careful local inquiry throughout the delta taluks, came to the conclusion that the sickness then prevailing was not attributable to the canal irrigation. He inclined to the opinion, which was shared by the

Sanitary Commissioner, that it was, in a great measure, due to an excessive consumption of opium. A good proof that he was right in his conclusions may be found in one of the oldest of our military cantonments.

Trichinopoly, which is considered one of the healthiest stations for troops, is traversed by a large irrigation canal taken off the Cauvery, and is almost surrounded with wet cultivation. This work was in existence when the country came into the possession of the English, so that there has been ample time to settle the question as to whether it has a malarious influence or not.

In regard to the efflorescence of surface salts, locally known as "chavadu," or Anglicised "soud," there is no doubt that in certain descriptions of soils this effect is produced, in a more or less degree, when irrigation is first applied. The salts present in the soil deliquesce, and are held in suspension in the water until evaporation takes place, when a saline deposit is left on the surface. But fortunately the water, which has the effect, above described, of making sterile lands which previous to its application were fertile, brings with it a remedy in the shape of a rich alluvium; and, if the floodings are continued, this deposit, combined with the application of leaf manures, reduces the excess proportion of salts to their proper limits, and the land again becomes fit for cultivation.

Lieut.-Colonel Mullins.—There is no accepted evidence that irrigation is injurious to health in any of the great fields of irrigation in this Presidency. There was an impression that fever was the result some few years ago in the Godavari delta; but it was shown that, though fever was in one or two seasons very prevalent there in cold weather, it was demonstrated that it was more prevalent and of a more severe type in the upland and unirrigated parts of the district.* The population of the Godavari, Kistna, and Cauvery deltas compares favourably as regards health with that of localities where irrigation is absent. The extent of land injured by efflorescence and surface salts is small. On the other hand, the area of barren land in the coast swamps made arable, and often ultimately very valuable, by washing out the salt, is very considerable. All deltas need more or less drainage; some localities more, and some less or none at all. It is a necessity of the manner and of the progress of formation of these alluvial tracts that the level of a good deal of the country should be low while the coast formation and the tendency which there exists to throw up bars at the outfalls of the rivers and sand dunes makes artificial arrangements requisite for the relief of the lands. Delta lands do not ordinarily drain direct into the rivers, but the slope of the country is from the rivers first and generally parallel to them afterwards.

Every part of every large tract of irrigated country needs to have its requirements as regards drainage investigated and provided for. Generally, the surplus irrigation water to be disposed of is insignificant compared with rain-fall drainage. It is the latter rather than the former which occasions such difficulties as are met with in the principal fields of irrigation in Madras.

Mr. Foster.—It is difficult to say whether any mischief has been done by canal irrigation by sickness. The statistics of births and deaths are not sufficiently reliable even now, and they were worse before the anicut was built, so that it is impossible to compare the two with any good effect. Before the anicut was made the delta still had the same quantity of water, and perhaps more than it has now, but it was distributed in a less orderly manner. There is no doubt now that there is a marked distinction in the statistics of fever between the delta and the upland taluks, and I am inclined to think it is a different type of fever. The delta fever begins one month earlier in the year than the upland fever, though they both remain at their height for about three months, from July to October; in the upland taluks the fever decreases, but in the delta it increases, during those months. I certainly think that irrigation (whether by distribution by canal, or by overflowing of the river, I cannot tell) has some effect on sickness. I have not heard of any injury done to the land by raising the water level or by the production of efflorescent surface salts.

Drainage has been carried on to a considerable extent of late years; it was, in my opinion, neglected at first; it would certainly have increased greatly the expense of the works in the first instance. Drainage should, I think, be carried out so as to afford no hindrance to the natural flow of water, except in such cases where the water is held up for use, and is not allowed to become unpleasantly stagnant. We have not yet done all that might be considered necessary, but drainage works are in progress.

* Low latitude and proximity to the sea appear to be favourable to health in irrigated tracts.

QUESTION 18.—PURIFICATION OF SOIL.

Has canal irrigation anywhere been combined with attempts to improve soils previously unfit for cultivation from the presence of noxious salts?

PUNJAB.

Captain Ottley.—Yes, a very notable case on a small scale is that of the Lawrence Hall Gardens at Lahore. A few years ago the ground here was white with reh efflorescence, and the locality might have been fairly instanced as a singularly bad case of the evil. So bad was it that it seemed hopeless ever to expect any good result from the experiments which were to be tried on it. By dint, however, of frequent floodings or washings with canal water, aided by drainage and careful and intelligent supervision, it would seem that the salts have been at last got rid of; at any rate they do not now come to the surface of the ground, and certainly the luxuriant vegetation in the gardens at the present time would seem to indicate that the evil has been really removed.

The case of these gardens is especially interesting, as some of the members of the Famine Commission must have had an opportunity of satisfying themselves that the evil does not now exist, while others will probably be able to testify to its existence in an aggravated form previous to the introduction of canal irrigation.

Ch IV. Qn. 18.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Board of Revenue.—The Board are not aware of any attempt having been made to improve soils previously (*i.e.*, before the introduction of canal irrigation) unfit for cultivation, in combination with canal irrigation. Experiments, on so small a scale, or under such exceptional conditions as to be of very little practical value, have been made, with a view of providing means for the reclamation of land rendered unfit for cultivation from the development of *reh after* the introduction of canal irrigation.

Colonel Brownlow.—Experiments on washing "reh" land free from salt were tried, on a most limited scale, on the Ganges Canal, but with, I believe, very doubtful success. I believe reclamation to be quite possible, as soon as the value of land in canal irrigated tracts rises sufficiently to admit of the requisite outlay on subsoil drainage.

Mr. C. C. Anderson.—Some experiments were made at Sikandra Ráo four years ago, but these were not made with view to destroying the salts. They consisted of laying a layer of fertile soil, canal silt, on the barren ground. The results were not financially successful.

Madras.

MADRAS.

Mr. Sullivan.—In this Presidency it is believed that no such attempt has been made; but as it has been practically demonstrated, as stated above, that the alluvial deposit brought down in the floods of the great rivers can, and does, neutralise the effect of earth-salts where they are found in excess, it would be well worth while trying the experiment of flooding the large saliferous tracts which are to be found near their mouths. Saturated as they are with saline matter, it would, of course, take some time before their sterility would be overcome, but of the ultimate success of the experiment there can be but little doubt. Such tracts, which now produce nothing, might be granted on favourable leases, and water for flooding supplied gratis during the time the rivers were in fresh. Were such inducements held out, it is believed that 10 years or so would suffice to convert these sterile wastes into food-producing areas.

Lieut.-Colonel Mullins.—The salt swamps in the lower parts of the Godavari and Kistna deltas have been reclaimed and converted into fertile lands by means of the water supplied from the canals. This process is going on year by year, and the change in the last few years in the appearances of the country in the localities referred to is very marked.

Captain Brockman.—Yes. I remember hat, in the Godaveri system of canals, canal water is granted free of water-rate for two years for flooding salt lands, and this privilege is frequently taken advantage of in lands near the sea-coast.

Ch. IV. Qn. 19.

Question 19.—General Effect of Irrigation on Character of Cultivation.

What has been the general effect of continued canal irrigation on the character of the cultivation? Has the irrigated area of the poorer grains which supply the chief part of the food of the people been gradually diminished, and has the area of the better crops been increased? If the area of poorer crops has been reduced, is this due to conditions of soil or position of lands and difficulties of access from the water-supply or to the relative profits in the one case being greater than in the other? State the general facts as to the changes in the areas irrigated during the last 10 or 12 years, and make any comments that seem desirable. Is there reason to suppose that prolonged irrigation damages the land under any circumstances? Is there any evidence of a reduced production?

Punjab

PUNJAB.

Major H. Grey.—Canal irrigation has greatly increased the cultivation of valuable crops, in supersession of that of the poorer staples in the Bahawalpur State, and is doing so in the Ferozepore District. Where the conditions of soil, position, and water supply permit, the zamindars put in indigo, cotton, sugar, and rice in place of less valuable crops.

Of course there is a limit to this in respect of water supply. Rice takes six times as much water as jowar, bajra, and the lighter kharif crops; sugar four times as much; indigo and cotton three times as much, and for second year or third year indigo. Moreover, the flow must be very early; not later than the commencement of March.

On the other hand, canals, both here and in Ferozepore, have permitted the cultivation of cereals, where without them such could not have been sown, or at any rate matured. Thus, though causing the supersession of the poorer by the more valuable crops over large areas, canals have, in my experience, not diminished the actual area of cultivation of the poorer grains.

The productive power of land is certainly reduced where irrigation has long been applied. This, however, has nothing to do with the irrigation, but results from the shortsightedness of the zamindars, who overwork the land and are long in learning to use manure.

Captain Ottley.—The questions above asked do not admit for the most part of a reply from the Irrigation Department.

It would appear that the only way of obtaining a satisfactory answer would be to compare the arrears and distribution of the total crops of a tract before and after the introduction of canal irrigation. This information could be furnished from the settlement records alone, and to these this Department has no access.

Statements have been prepared showing the irrigation in detail for both the Western Jumna and Bári Doáb Canals for 15 years and 13 years past respectively.

From an inspection of these statements it will be seen that the total acreage irrigation varies, as might

be expected, with the rain-fall as well as with changes in the incidence of the charges for water.

It will also be observed that the acreage of some crops, such as cotton, for instance, appears to depend to a very great extent on the greater or less demand which may exist in the markets for that particular commodity.

An inspection of the returns of the Western Jumna Canal will show that ordinarily no very great variations occur in the areas of the more valuable crops, such as sugar-cane, rice, and the various dyes, spices, oils, &c.; whereas the poorer cereals and the pulses are only, as a rule, cultivated by the aid of the canal water to any great extent in years of drought. The very large acreage of fodder crops on the Bári Doáb Canal, as compared with that on the Western Jumna Canal, is worthy of remark, and is clearly due to the former passing through a very much drier tract than the latter.

It is believed that it will be apparent from the statements given that in ordinary years the better classes of crops are alone cultivated with canal water, and that in these years the poorer grains are grown by the aid of the rain-fall. In years of drought these also require artificial aid, without which their cultivation would be impossible.

Although, as previously stated, it is impossible for this Department to show conclusively the effect of the introduction of canal irrigation on the general cultivation of the tract under its influence, still, from observation, it is believed that as a matter of fact the area under the poorer crops has really not decreased, at any rate to any great extent, but that the total area of cultivation has been increased by an increase in the area under the better crops. It should also be borne in mind that the poorer cereals and the pulses form the food staple of the very poorest classes alone, for it is believed that with this exception the mass of the population consume wheat and barley, and these grains form, as will be seen, a very large proportion of the crops cultivated by the aid of canal water.

The only reason for the cultivation of the better class of crops, when canal irrigation is used, is the relative greater profit which is thus obtained.

With regard to the last question, it may be said that there is no evidence of reduced production, and that it is considered that prolonged irrigation does not damage the land in any way, providing that the drainage of the tract is attended to in the manner described in the reply to question 17.

The produce per acre and the rate per rupee of such produce, as shown in Form No. VII. of the Superintending Engineer's Revenue Reports, are furnished yearly by the District Officers to the executive engineers of the various canal divisions.

The following figures extracted from these returns show the estimated amount and value of the crops grown, in 1877–8, on the two permanent canals of the Punjab:—

Food Grains.	Bári Doáb Canal.		Western Jumna Canal.	
	Maunds.	Rupees.	Maunds.	Rupees.
Cereals:—				
Wheat, barley, mixed grain - -	2,630,425	52,60,850	2,866,829	70,90,170
Rice - - - - -	460,319	9,20,638	709,808	22,16,367
Cereals:—				
Jowár, kangní, maize - -	700,207	14,00,414	650,144	17,14,547
Pulses:—				
Gram, masúr chiná - - -	168,853	3,15,017	200,424	4,52,231
Total food grains -	3,959,804	78,96,919	4,427,205	1,14,73,315

Total amount of food grains on the two canals during 1877–78, maunds 8,387,009, valued at Rs. 1,93,70,234.

In other words, the two permanent canals of the Punjab (the Bári Doáb and the Western Jumna) enabled the cultivators to grow some 300,000 *tons* of food grains in a year when, owing to the drought, it would have been impossible to raise these crops without irrigation. Moreover, it is estimated that the value of other crops (such as sugar-cane, dyes, oils, spices, vegetables, &c.) grown during this same year amounted to Rs. 94,59,366 (*i.e.*, Rs. 13,76,166 on Bári Doáb Canal and Rs. 80,83,200 on Western Jumna Canal), and that thus the country was enriched and better able to bear the stress of scarcity and high prices.

BARI DOÁB CANAL.

	1865–66.	1866–67.	1867–68.	1868–69.	1869–70.	1870–71.	1871–72.	1872–73.	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.
Rainfall — Kharif	Scanty.	Scanty	Scanty.	Drought.	Fair.	Scanty.	Good.	Good.	Fair.	Very good.	Good.	Very good.	Very scanty.
Rainfall — Rabi	Good.	"	"		Good.	"	Scanty.	"	Very good.	Scanty.	Very good.	Good.	Good.
Other Causes					Water advantage first began to be charged during rabi.	Differential rates introduced from rabi.							Great export of grain to Madras.
Better Class of Crops													
Sugar cane (annual)	9,180	9,156	10,601	9,811	11,623	6,994	6,287	9,158	10,305	8,900	8,729	7,496	6,339
Rice (kharif)	53,564	57,605	63,962	41,256	76,709	24,716	11,598	29,094	32,882	27,638	24,511	27,049	24,245
Cotton (kharif)	5,235	12,511	21,101	8,205	11,671	11,228	20,387	27,537	27,868	17,612	33,215	19,676	10,545
Wheat and barley (rabi)	64,541	113,704	129,934	185,510	95,553	162,301	173,354	103,872	99,039	149,682	92,247	96,970	138,095
Vegetable (kharif and rabi)	207	630	583	731	3,786	3,247	Not shown	2,449	2,053	2,040	1,119	1,632	2,240
Total	132,727	193,606	226,181	245,513	199,342	208,486	211,626	172,110	172,147	205,872	159,821	152,823	181,464
Poorer Class of Crops.													
Cereals.—Jowar, bajrá, kangní, maize, mixed grains.	7,205	4,451	5,338	18,135	10,743	34,025	29,352	20,911	19,604	22,980	20,768	12,724	37,716
Pulses.—Urd, chiná, moth, gram, masur, &c.	2,902	3,752	3,320	6,478	6,085	6,739	12,513	7,623	9,653	8,690	4,646	4,675	10,424
Fodder.—Charri, sinji, grass, &c.	24,160	19,543	23,244	16,172	9,220	13,525	13,499	14,869	13,988	16,744	20,971	20,495	15,379
Total	34,267	27,746	31,902	40,785	26,048	54,289	55,364	43,403	43,245	48,414	46,385	37,894	63,619
Total of above totals	166,994	221,352	258,083	286,298	225,390	262,775	266,990	215,513	215,392	254,286	206,206	190,717	244,083
Total irrigation, including dyes, oils, spices, tobacco, &c.	175,979	228,452	262,128	299,834	233,927	279,210	287,070	228,796	232,146	279,813	214,599	202,712	266,955

NOTE.—Up to the rabi of 1870–71, a uniform rate of Rs. 2–6–8 was charged for all descriptions of crops. From that date the following have been the flow rates, the lift rate being half of these :—sugar-cane, Rs 6–0–0; rice, 4–12–0; cotton, wheat, barley, and vegetables, Rs. 2–8–0; jowar, bajrá, kangní, maize, gram, masur, urd, grasses, simji, Rs. 1–8–0 per acre.

WESTERN JUMNA CANAL.

	1863–64.	1864–65.	1865–66.	1866–67.	1867–68.	1868–69.	1869–70.	1870–71.	1871–72.	1872–73.	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.
Rainfal - Kharíf -	Fair.	Scanty.	Very fair.	Scanty.	Good.	Drought.	Scanty.	Fair.	Good.	Very good.	Very good.	Good.	Very good.	Fair.	Drought.
Rainfal - Rabi -	—	Very scanty.	Good.	Very scanty.	Very good.		Very scanty.	Scanty.	Scanty.	Fair.	Good.	Scanty.	Very scanty, but the very heavy rainfall of September enabled rabi crops to be grown without canal water.	Scanty.	Fair.
OTHER CAUSES -				Increase of rates and differential rates introduced from 1st November 1876.							Revision of settlement in progress.	Revision of settlement in progress.			
BETTER CLASS OF CROPS.															
Sugar-cane - -	30,089	29,786	34,028	19,774	27,209	38,431	45,122	39,878	31,325	40,545	42,068	33,439	26,564	34,602	42,135
Rice - - -	47,353	57,157	51,517	62,071	39,456	33,490	46,705	45,862	32,974	43,143	43,818	50,029	51,827	46,074	34,733
Cotton - - -	45,882	77,738	62,684	1,04,796	98,801	74,876	80,093	98,445	1,00,951	96,129	54,806	58,236	69,577	76,616	65,989
Wheat and barley, and mixed grains.	1,45,234	2,01,300	1,73,775	1,91,471	1,25,707	2,87,550	2,14,173	2,09,648	2,19,608	1,14,364	1,00,195	1,74,409	87,115	1,52,981	2,29,019
Vegetables, including chillies, singharas, &c.	Not known	1,126	2,811	6,365	5,098	8,182	7,862	6,930	6,221	4,554	3,107	4,287	4,014	5,008	2,845
Total - - -	—	3,67,107	3,24,815	3,84,477	2,96,271	3,92,529	3,93,955	4,00,760	3,91,079	2,98,735	2,43,994	3,20,400	2,39,097	3,15,281	3,74,721
POORER CLASS OF CROPS.															
Cereals.—Jowár, bájri, kangni, maize, &c.	Not known	13,770	35,672	15,418	11,241	39,331	49,503	18,818	10,052	6,345	8,792	8,228	16,782	8,566	43,222
Pulses.—Urd, mote, grám, masur, &c	Not known	20,770	1,450	3,626	1,468	31,027	25,355	19,437	20,236	10,081	12,017	19,762	8,072	11,364	26,132
Fodder.—Lucerne, chari, grass, singi, &c.	Not known	1,481	1,631	1,145	240	729	623	550	658	552	886	892	762	1,169	1,812
Total - -	—	36,022	38,753	20,189	12,949	71,087	75,481	38,805	30,946	16,978	21,695	28,882	25,616	21,099	71,166
Total of above totals -	—	4,03,129	3,63,568	4,04,666	3,09,220	4,63,616	4,69,436	4,39,565	4,22,025	3,15,713	2,65,689	3,49,282	2,64,713	3,36,380	4,45,887
Total irrigation, including dyes, oils, spices, tobacco, &c.	3,51,537	4,34,965	3,97,963	4,47,171	3,31,037	4,86,878	4,96,542	4,62,707	4,44,385	3,51,821	3,11,747	3,82,847	3,09,595	3,66,482	5,07,974

NOTE.—From March 1855 the flow rates had been Rs. 1–3–2 per acre for first-class, and Rs. 0–10–8 for second-class crops; the lift rates being two thirds of these. These rates were slightly in excess of those which had been in force since 1827. From the 1st November 1866 (*i.e.*, commencing with the rabi of 1866–67), the following differential flow rates were imposed :—sugar-cane, Rs. 5; rice, tobacco, opium, vegetables, and singharas, Rs. 3–0–0; indigo, cotton, and all rabi crops (such as wheat, barley, chína, gram, and other pulses), Rs. 2–4–0; all other kharíf crops (jowár, bájra, Indian corn, kangni, &c.), Rs. 1–10–8,—the lift rates being still about two-thirds of above

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

The Board of Revenue.—Mr. Webster has pointed out that the poorer grains, which supply the chief food of the people, are not as a rule irrigated at all. They depend for the most part on the rain-fall. He thinks there is no reason to believe that the area on which they are produced has decreased in consequence of an increase in the area on which the better crops are grown, the soil adapted for the productions of the poorer grains not being suitable generally for the growth of the poorer crops. Mr. Sladen, from an examination of a statement of areas of different crops irrigated from the Eastern Jumna Canal, in the Saharanpur district, for the past 10 years (which statement the Board enclose with their report), arrived at the conclusion that, reckoning gardens and orchards, sugarcane, rice, wheat, barley, cotton, and indigo as superior crops, the area under superior crops has increased and that under inferior crops has diminished. Mr. Sells, in his reply to question 19, has given the areas covered by different crops in the canal-irrigated parts of the Muzaffarnagar district for 1876–77 and the seven preceding years. "The above "figures show," he writes, "that the canal-irrigated "crop fluctuates greatly, and in rather a capricious "manner, especially observable in the case of *rice* "and *gram*. Turning to individual crops, the chief "increase (in the areas of 1876–77, as compared with "those of 1872–73) has been in wheat, 17,141 acres; "maize, 2,131 acres; sugarcane, 5,571 acres; cotton, "620 acres; indigo, 753 acres; mixed cereals, 431 "acres. The main result is that food-grains have "not been driven out of the field at all by the more "paying life-sustaining crops; and the figures also "show plainly, I think, that canal irrigation has had "no appreciable effect in diminishing the area given "to the poorer class of food-grains."

Mr. Wright, Settlement Officer of Cawnpore, noting that it is generally supposed that the extension of canal irrigation has largely stimulated the cultivation of wheat, indigo, and gram, shows, from a comparison of the cultivation at the former and at the present settlement, that such does not appear to have been actually the case, with the exception of indigo, the earlier returns regarding which Mr. Wright does not altogether credit. The area under wheat has fallen from 81,792 to 73,730 acres, while that under barley, a crop which receives irrigation less seldom than wheat, has risen from 129,104 to 327,092 acres. On the other hand, the area under rice and maize had risen from 4,586 and 654 to 27,735 and 24,085 acres. No returns or replies from any other districts have been received. They will be forwarded to the Famine Commission hereafter. The Board have little doubt that when land hitherto unirrigable, except at a great cost, if at all, is made easily irrigable, and irrigable too at a comparatively small cost, the superior crops, which can be grown only or with greater certainty with irrigation, must to some extent displace the inferior, which were grown on certain descriptions of land, not only because they are of poor quality, but are also unirrigable. Moreover, the poorer crops are raised in the autumn, while the superior crops are grown in the winter and in the spring. Canal water is far more valuable in the latter than in the former season. It may be more profitable to grow an inferior crop without the aid of artificial irrigation, trusting to the usual rain-fall, than to a superior crop, which demands a larger outlay in its cultivation.

Col. Brownlow.—The first effect of canal irrigation is, so far as my experience goes, to extend widely the area of annual cultivation of ordinary crops. The facility of irrigation and large amount of labour thereby set free leads to the occupation and breaking up of all available land that may remain uncultivated in a village. Then as the cultivators gradually acquire capital, the cultivation of the superior crops supersedes that of the poorer kinds; sugarcane, rice, indigo, and wheat replace the various kinds of millet and other inferior grains. The greater profits of the better classes of crops naturally bring about this result. No detailed information regarding crops watered is given in the irrigation revenue reports for years previous to 1859–60 for the Eastern Jumna Canal and 1865–66 for the Ganges Canal. In the former year the Eastern Jumna Canal had been 20 years, and in the latter year the Ganges Canal had been 10 years in operation. The areas given below seem to indicate a steady increase in the area of first-class crops watered, although the proportion borne by them to the total area fluctuates, according to the nature of the season. On the Eastern Jumna Canal the irrigation of sugarcane, rice, wheat, and orchards—

During the two years 1859–60 and 1860–61 amounted to - -
During the two years 1865–66 and 1866–67 amounted to - -
During the famine year 1868–69 amounted to - - -
During the two years 1875–76 and 1876–77 amounted to - -

On the Ganges Canal the irrigation of sugarcane, rice, wheat, orchards, and indigo—

During 1865–66 and 1866–67 amounted to - - -
During 1868–69 amounted to -
During 1875–76 and 1876–77 amounted to - - -

The facility afforded for overcropping the land is one of the greatest drawbacks of canal irrigation, and though I have no figures to prove reduction in fertility of land from this cause, yet, when it is remembered that the double-cropped land is rarely manured, there seems to be good reason for accepting the commonly-received opinion on the Eastern Jumna Canal that ordinary land irrigated from the canal does not yield as much now as it did 20 years ago. It is, however, also allowed that but for the fertilising properties of the mud suspended in the canal water during the summer and autumn, the falling off in the productive power of the land would have been much greater than it has been.

Captain Tickell.—To produce an increase in the more valuable crops. The increase in sugar cultivation has been the most marked in this division. This is believed to be due to the greater profit derived.

The following is a comparison between the areas under several crops in this division in 1868–69 and 1877–78:—

Year.	Sugar.	Cotton.	Rice.	Other Crops.	Total.
1868–69 -	6,913	1,634	18,272	3,261	30,080
1877–78 -	15,433	3,067	11,623	5,557	35,680

Mr. C. C. Anderson.—Canal irrigation tends to the substitution of the more valuable for the poorer crops in good soil. Thus, barley and gram will be replaced by wheat and sugar. The poorer lands, which, prior to canal irrigation, produced bajra and some kind of vetches, are only irrigated in years of drought.

The poorer grains are only irrigated in exceptional years; the introduction of canal irrigation has not then affected the irrigated area of such crops.

The decrease in the area, not the irrigated area, of poorer crops is due entirely to conditions of soils and the relative profits in the one case being greater than in the other.

The rabi areas irrigated by the Eastern Jumna and Ganges canals since 1868 are given below. They speak for themselves:—

RABI IRRIGATED AREA.

Canal.		Year.	Gram.	Barley.	Wheat.	Total Rabi.	Rabi. Gram.	Rabi. Barley.	Rabi. Wheat.
GANGES	I.	1876-77	10,025	153,551	385,362	592,951	1·79	25·90	64·91
		1876	14,488	178,941	329,186	571,842	2·53	31·29	57·56
		1875	21,275	199,831	331,709	602,815	3·52	33·14	55·02
		1874	13,536	180,225	286,091	507,472	2·66	35·51	56·37
		1873	17,216	152,216	242,518	437,979	3·93	34·86	55·37
	II.	1872	8,982	93,068	249,254	373,867	2·40	24·89	66·66
		1871	15,725	125,644	333,512	499,931	3·14	25·13	66·71
		1870	25,961	123,144	264,371	438,560	5·91	28·07	60·28
		1869	39,985	242,354	418,228	734,132	5·44	33·01	56·96
		1868	13,274	88,156	231,559	348,319	3·8	25·3	66·5
EASTERN JUMNA		1876-77	29	2,120	96,792	104,397	0·27	2·03	92·71
		1876	3,818	1,617	97,223	108,552	3·51	1·48	89·56
		1875	4,252	1,703	88,109	101,272	4·19	1·68	87·00
		1874	1,992	1,381	85,864	97,570	2·04	1·41	88·00
		1873	3,040	3,196	89,394	104,455	2·91	3·05	85·48
		1872	4,753	4,202	100,589	120,345	3·94	3·49	83·58
		1871	3,368	5,347	98,166	114,603	2·93	4·66	85·65
		1870	6,670	8,018	106,653	131,903	5·85	6·07	80·85
		1869	8,602	9,004	146,340	172,276	4·99	5·22	84·94
		1868	3,121	2,400	94,089	103,938	2·9	2·3	90·5

	Ganges and Eastern Jumna. Flow.	Ganges and Eastern Jumna. Lift.	Agra. Flow.	Agra. Lift.	Rohilkhand. Flow.	Rohilkhand. Lift.	Dún. Flow.	Dún. Lift.	Bundelkhand. Flow.	Bundelkhand. Lift.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.
Gardens	3 0 0	2 0 0	4 0 0	2 0 0	2 0 0	1 0 8	3 0 0	—	4 0 0	2 0 0
Sugarcane	5 0 0	3 5 4	6 10 8	3 5 4	2 8 0	1 10 0	5 0 0	—	6 10 8	3 5 4
Wheat	2 4 0	1 8 0	3 0 0	1 8 0	0 12 0	0 8 0	1 4 0	—	3 0 0	1 8 0
Barley	2 4 0	1 8 0	3 0 0	1 8 0	0 12 0	0 8 0	1 4 0	—	3 0 0	1 8 0
Rice	5 0 0	3 5 4	6 10 8	3 5 4	2 4 0	1 8 0	3 0 0	—	6 10 8	3 5 4
Maize	1 10 8	1 0 0	2 0 0	1 0 0	0 4 0	0 2 0	1 4 0	—	2 0 0	1 0 0
Joar	1 10 8	1 0 0	2 0 0	1 0 0	0 4 0	0 2 0	1 4 0	—	2 0 0	1 0 0
Gram	2 4 0	1 8 0	3 0 0	1 8 0	0 12 0	0 8 0	1 4 0	—	3 0 0	1 8 0
Peas	2 4 0	1 8 0	3 0 0	1 8 0	0 12 0	0 8 0	1 4 0	—	3 0 0	1 8 0
Fodder	1 10 8	1 0 0	2 0 0	1 0 0	—	—	—	—	2 0 0	1 0 0
Cotton	2 4 0	1 8 0	3 0 0	1 8 0	—	—	2 4 0	—	3 0 0	1 8 0
Indigo	2 4 0	1 8 0	3 0 0	1 8 0	—	—	2 4 0	—	3 0 0	1 8 0
Opium	3 0 0	2 0 0	4 0 0	2 0 0	0 8 0	0 4 0	3 0 0	—	4 0 0	2 0 0

The use of water does good, the abuse of it harm. Not aware of any.

BOMBAY.

Colonel Anderson.—No material change in Bombay in this respect during the last 10, or even 20, years.

Mr. Hughes.—The general effect of canal irrigation, so far as it has gone, has been to increase the area of the better class of crops, such as sugar and other garden crops, groundnut, and other similar crops which cannot be cultivated without the means of irrigation; but this cannot have affected the area of the poorer crops, nor is it likely it will ever do so in this Presidency. The area within the influence of our works can never bear a large proportion to the area available for cultivation in any district, and in every collectorate there is a large area of uncultivated culturable land available for the cultivation of the poorer grains should irrigation encroach upon the area at present devoted to those crops.

In one instance it is reported that the construction of a canal has had a marked effect on the cultivation. The Krishna canal in Satara traverses a district more favourably situated as regards rainfall, soil, and population than that under any other of our new works. The people, too, are better off. The principal crops irrigated from the canal are sugar, groundnut, and wheat. The area of groundnut varies very considerably. This crop is sown in the early part of the monsoon, but in the cold weather irrigation is essential except during years of exceptional rainfall. It is stated that the people avail themselves of the protection or insurance the canal affords to cultivate extensive areas of this valuable crop. If there is not sufficient rain during the cold weather, they apply for canal water and secure a good crop; but if sufficient rain falls, they enjoy the advantage of a good harvest without paying water-rate.

Mr. Propert.—The general effect of continued canal irrigation has been the extended production of a more valuable class of crops, and an improvement in the value of the crops formerly grown without irrigation. The new irrigation works of Khandesh have been opened too recently to allow of the preparation of statistics. Prolonged irrigation undoubtedly requires the free use of manure and a strict adherence to a proper rotation of crops. If these conditions be fulfilled, reduced production would be unlikely.

Ch IV. Qn. 19.

Madras.

MADRAS.

Lieut.-Colonel Mullins.—In Madras rice or paddy is the chief irrigated crop. There are many different kinds of paddy. An abundant water-supply leads to the introduction of the better kinds of rice and to the improvement of the inferior kinds. The question probably refers to irrigated crops of a kind differing materially from the staple in Madras. Ragi, hemp, and many crops are grown before or after the paddy on the same lands, but they are altogether subsidiary to the main crop.

Some soils are much better suited than others for continuous irrigation. There are soils which have been certainly irrigated for 25 to 40 years which have increased in value greatly; and the prices which irrigated lands in Tanjore, and more especially in Tinnevelly, where as much as Rs. 3,000 an acre have been paid, indicate the belief of the natives that no deterioration of value is to be expected.

Mr. Longley.—In Salem, the poorer grains are grown on dry uplands, and not on irrigated areas, so that it is not probable that the irrigated areas would affect the cultivation of these dry grains, which are the staple food of the population. There is nothing to show if the extent, now irrigated by the Cauvery, was ever cultivated with the staple dry crop.

The cultivation under the channels during the last 10 years was as follows:—

Fasli.	Extent.	Revenue.
1277	5,463	55,750
1278	5,448	55,609
1279	5,454	55,720
1280	5,474	55,761
1281	6,210	57,520
1282	6,348	58,259
1283	6,204	58,073
1284	6,221	58,338
1285	6,232	58,367
1286	6,232	58,367

Owing to the sufficiency of supply, there were no appreciable fluctuations in the areas cultivated in the different years.

I have no reason to suppose that prolonged irrigation (provided the land is well manured for each crop) damages the land. It is probable that if the cultivator would give his land rest, and not raise five crops in two successive years, the land would produce heavier crops; but it will take a long time before the native cultivator will allow his land to rest. "As much as possible, and as quickly as possible," is the ryot's motto. His forefathers never fallowed the land, and why should he? Natives believe that the alluvial deposit brought down by the Cauvery when in flood regenerates the lands and prevents deterioration.

Ch IV. Qn 20.

Question 20.—Inundation Canals. Wells.

Under what conditions is an inundation canal, giving water only during the rainy season, found to be useful? To what extent is it probable that such irrigation could be usefully attempted in the North-Western Provinces, or elsewhere where not now applied, and where a water-supply is available? How far would such irrigation be useful for rabi or kharif cultivation? How far may wells be depended on to supplement the deficiencies of supply in such a canal during the dry season?

Punjab.

PUNJAB.

Captain Ottley.—The conditions may be stated as follows:—

1. A short or uncertain rain-fall, rendering it impossible to grow crops without irrigation.
2. A river whose annual rise may be fairly depended upon both as to date and height.
3. A tract of country the surface of which can be easily watered by the usual rise of the river, and through which the canal can be cheaply made. It must also be of sufficient width to render the irrigation probably remunerative.
4. Lastly, as regards the rabi cultivation, a sufficient number of wells to mature the crops sown by the aid of canal water.

These conditions are fulfilled in most of the khadir or low lands bordering on the rivers of the Punjab. The rain-fall is exceedingly small at the best, and frequently fails almost entirely; the rivers are fed from the snows of the Himalayas, and rise with great regularity as summer approaches; the khadir tracks have but a small elevation above the river beds, and the country slopes on either side from the river, whilst the existence of old disused river channels frequently enables a canal to be cut with but a small expenditure of money.

The irrigation from an inundation canal being from its nature very precarious, the rates must be low, and consequently the capital cost must be small in order to enable the canal to pay its way.

In the Punjab such irrigation might be usefully attempted wherever there are sufficiently wide belts of khadir land with good soil to render the construction of inundation canals remunerative.

The following is a brief statement of some of the tracts in the Punjab which might thus be irrigated:—

1. The strip of khadir land lying on the right bank of the Sutlej between the upper and lower series of Sutlej inundation canals. It has been estimated that 1,40,000 acres could be watered from the Sutlej river in this way. The Government of India has directed that these works, if ever carried out, should be so aligned as to render it possible to incorporate them as part of the permanent scheme of canals on the Sutlej which was submitted in 1873.

2. An inundation canal from the Ravi below Tolumba for the irrigation of the lands between that place and Mooltan. It has been estimated to water 90,000 acres.

3. A canal from the Ravi to water the station of Montgomery and surrounding country, say some 15,000 or 20,000 acres.

4. An inundation canal from Chiniot-on-the-Chenab, for the irrigation of the Khadir. It is designed to irrigate 23,900 acres.

5. An inundation canal from Ramnagar-on-the-Chenab for the irrigation of 133,680 acres.

6. Further inundation canals could be made with advantage in the Jech Doab, between the rivers Chenab

and Jhelum, but no detailed investigation has been made.

There is always a risk of the river cutting away, deserting, or silting up the heads of inundation canals, but under favourable circumstances the kharif crop can be assured by their means alone. As regards the rabi crop, the ground can be prepared for sowing; but, with the exception of gram, all rabi crops require to be subsequently watered from wells. In the Punjab, the inundation canals are usually dry from October to May.

The last question is not completely understood. If it refers to the kharif crops, it may be broadly said that the canal is not, as a rule, supplemented by wells at all. The rivers from which these canals are supplied always rise; if this rise is large the irrigation is large; if small, the irrigation is proportionately less; but so far as actual experience goes it appears that, as a rule, the cultivators never attempt to supplement it in any way; in fact, the Persian wheels are usually dismantled during this season, only to be set up again in time for the rabi waterings.

If the question, however, refers to the rabi, the reply must be that as a broad general rule the rabi crops (with the exception of gram) must be brought to maturity by the aid of well water.

It is, perhaps, desirable to note here that, at the close of the inundation season, the water generally stands much higher in the wells than at its commencement, and that this alone is a great help to the cultivators, inasmuch as the water has to be raised through a less height. It may also be well to note that very frequently the cultivators sow more rabi land than they are able to perfect by means of well irrigation alone. They know they can secure a certain area under each well, and they trust to a seasonable fall of rain for the balance; it is a matter of pure speculation, but from the prevalence of the practice referred to it would appear to be, on the whole, a paying one.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES

Board of Revenue.—Inundation canals have not come under the observation of the Board. Irrigation from an inundation canal would, the Board, however, consider, be most useful to kharif crops. They understand that, in the Panjáb, inundation canals are made use of for the irrigation of low lands (khadir) bordering on rivers. When the rivers are in flood, the autumn crop is watered from cuts made from the river inland for a certain distance and then carried in a direction to the fall of the country or the course of the river. In the cold season, when the river is low, the canals run dry, and the spring crop derives no benefit from them (*see* Roorkee Treatise on Civil Engineering, Volume II., p. 309). It is clear, therefore, that irrigation from such canals would be useless for rabi cultivation. In ordinary dry seasons (the commission speak of *the*, not *a*, dry season) the extent to which wells can be depended on to supplement the deficiencies of supply in such canals depends entirely on the extent to which well-irrigation is provided. In an exceptionally dry season, wells, especially where the water is supplied by infiltration (percolation), might themselves run dry.

Colonel Brownlow.—An inundation canal, giving water during the rainy season only, is most useful in comparatively rainless countries traversed by a river, which rises in snowy or rainy mountains, and is subject to periodical and comparatively steady increments of volume. The valleys of the Indus, Chenab, and Sutlej afford examples of most favourable localities for inundation canals. The deltas of the Kavari, Godavari, and Kistna rivers afford another example of localities where water is profitably supplied during the autumn months for the irrigation of rice. In both cases the irrigation is slovenly to the last degree, but in the former case the great dryness of air and soil, and in the latter the equability of the climate and to some extent diminished rainfall prevent any ill-effects from throwing the water broadcast over the country. Irrigation from channels which remain dry and unused for half the year will always be slovenly. The banks crack from drought and are worn down by cattle during the dry season, and when the water comes down they burst, or are over-topped, in all directions. Such irrigation is only suited to comparatively* rainless localities, or those in which rice can, with impunity, be grown in broad areas. I am personally most strongly opposed to its introduction into the North-Western Provinces, believing that inundation canals would never pay in that part of India, and that the deterioration of soil and climate produced by them would far outweigh any occasional advantage derivable from them. Sugarcane cannot be grown without the command of a supply of water all the year round; indigo, and the better classes of rice, require water in the hot season; indigo from April, and first-class rice† from end of May, while a very moderate rainfall, if fairly well timed, will suffice for the other autumn crops. If the "rabi" crop were started in October over broad areas by artificial irrigation from a Government canal during a year of drought, the cultivators would certainly look to Government to maintain the crop, if necessary, by a second watering in December, and the gravest discontent, followed by almost universal distrust and disuse of the canal, would, I am sure, result from any failure to do this. I do not believe that an inundation canal in the North-Western Provinces would pay its working expenses, although it would do much mischief in six years out of ten. I may quote the miserable failure of the Madras Irrigation Company's inundation canal in the Kurnool and Cuddapah districts of Madras Presidency in support of my views of the unremunerativeness of these works, except in localities peculiarly suited to their construction.

I do not think that wells can be depended on to supplement deficiencies of a canal during drought, as my experience goes to show that men who have started a crop by well irrigation will not afterwards resort to the canal except in time of drought when the wells are, by the hypothesis, supposed to take the place of the canal. Nor could wells be depended on to maintain crops started by a canal except to a very limited extent, unless the country were so thickly covered with them as to render it quite independent of canal irrigation.

* See marginal note in answer to question 23. I believe that the rainfall in the deltas of the Kavari, Godavari, and Kistna rivers during *the months of June to October* is, as a rule, very light. I remember having been told by the Executive Engineer of the Tanjore district in 1873 that the heaviest floods in the Kavari often found Tanjore under a cloudless sky

† For the seed-beds from which the rice is afterwards transplanted

Ch. IV. Qn. 20.

BENGAL.

Bengal

Colonel Haig.—We have no inundation canal as yet, but one is being made at Sarun, which is intended to throw water from the Gunduk into four of the old flood outlets of that river.

Bombay.

BOMBAY.

Mr. Hughes.—A canal giving water only during the rainy season is useful principally in districts in which the people are familiar with the cultivation of rice. In other districts the short experience we have had would appear to indicate that such a canal will only be extensively useful during years of drought, more especially when failure of the latter rain occurs. If the early rain is sufficiently favourable, the people sow the crop, and there is an inducement to them to prevent its failing by taking canal water if the latter rain fails. If the early rain fails they will not sow. I believe there is a general prejudice against sowing without rainfall, even where water for irrigation is available.

As an example of the success of canals carrying a monsoon supply only, in districts where rice cultivation is practised, the Khari river irrigation in Guzerat may be cited. Full particulars in regard to these works are given in paras. 59 to 73 of the Revenue Report for 1876–77, Part I. These works irrigate an area of 8,448 acres of rice. 4,737 acres is Government land assessed at, on the average, Rs. 7–4–5 per acre. Of this Rs. 2–0–11 is on the land and Rs. 5–3–6 is on the water. The supply of water seldom lasts beyond the rice season, and the crops grown are almost exclusively rice, followed by wheat or gram.

Colonel Anderson.—Much doubt the utility of a canal giving water only during rainy season. First, the people would not, as a general rule, take the water till it was too late; they would hope always for rain to-morrow. Secondly, water would be of little use on undulating ground, and no one would be at the enormous expense necessary to level his land for the occasional resort to irrigation.

Madras.

MADRAS.

Lieut.-Colonel Mullins.—Nearly all the river irrigation in Madras is effected by what are understood to be inundation canals, and channels, *i.e.*, canals designed to be full only when the rivers are in fresh. Successful irrigation without the aid of storage tanks is possible only when the freshes last through the season of the chief crop. With tanks, and channels arranged according to the circumstances of the river and the character of its freshes, any river can be made to serve irrigation purposes. No canal here has been designed with reference to the minimum supply of a river. Wells might be useful to irrigate seed-beds; they are seldom necessary or used for paddy cultivation except in the country near the coast supplied by rain-fed tanks; for raggy and similar garden crops they are used extensively in many parts of the country.

Ch. IV. Qn. 21.

QUESTION 21.—CANAL ADMINISTRATION.

What is the system of canal administration? Who is responsible for distributing the water and for collecting the dues? May the functions of the engineer in charge of the works and the technical business of the water-supply, and those of the officer responsible for seeing that the available water is distributed equitably to the land that most requires it, and securing water to the extension of irrigation and the realisation of the canal revenues and their due assessment and increase, be best combined, or should they be kept separate? State the reasons for your opinions.

Ch. IV. Qn. 22

QUESTION 22.

What system actually prevails in your Province, and if you think it susceptible of improvement, say how? Do you think a special canal law necessary to admit of proper administration? And have you such a law, and is it satisfactory?

Punjab

PUNJAB.

Captain Ottley.—The Irrigation Department in the Punjab is administered by a chief engineer, who is secretary to the local government. He is aided by a personal assistant and by an assistant secretary. Under the chief engineer there are four superintending engineers in charge of circles, and under these again are the executive engineers of divisions and their assistants and subordinates of both the Works and Revenue establishments. In the Punjab, the executive engineers are responsible for the distribution of water and the assessment of the water-rates, whilst the deputy commissioner collects the revenue.

"It is considered that all matters connected with the distribution of the water-supply, the assessment of the water-rates, the settlement of disputes between the cultivators, and complaints against the distribution or assessment are best left in the hands of the engineers, the collection being entirely in the hands of the civil officers of the district.

The following extracts from a "Report on Irrigation Works," by Colonel (now General) Strachey, R.E., then (1867) Inspector General of Irrigation Works, will, it is believed, afford the best reply that could be given to the question as to whether the construction

and maintenance of the works, and the management and distribution of the water-supply, could best be combined in the hands of one set of officers or assigned to two distinct classes of agents.

After remarking that no serious question was in the present day likely to arise regarding the agents who should carry out the construction and maintenance of the works, because, from the nature of the work, it must obviously be performed by professional engineers if it is to be properly performed at all, General Strachey proceeds to the discussion of the question as to whether the management and distribution of the water-supply should or should not be left in the hands of the canal engineers, and says:—

"The positive arguments in favour of a professional management are that, for the economical and certain distribution of water in prescribed proportion to different localities, engineering skill is absolutely needed; that this skill is equally requisite to admit of trustworthy opinions being formed as to the sufficiency of the water-supply, the causes of deficiencies, and the best way of preventing or remedying them; the possibility of extending the use of the available volume of water, and the means of accomplishing this; the manner of dealing with the drainage of the irrigated lands, and utilising to the utmost the surplus water passing from them or the irrigating channels; the decision of disputes among consumers of water as to the shares to which they are equitably entitled, and the quantities they actually received. In fact, it may be said that, among all the steps that have to be taken in relation to the supply of the water and its distribution, there is not a single one which does not call for professional knowledge.

"The properly-qualified canal engineer has this knowledge; the revenue officer is, as a rule, wholly devoid of it, and it may be safely said that no knowledge of the sort in question which he will possess will be of sensible value.

"As a fact, when there is a non-professional management, the whole of the matters above mentioned are entirely neglected, until the evils caused by such neglect become so serious as to lead to an engineer being called in to apply a remedy.

"Nor does this complete what has to be said on the subject. In truth, the full benefit of the engineering skill and knowledge can never be applied to the construction and maintenance of the works unless the engineers are constantly watching their operation, and have an intimate acquaintance with all their peculiarities and the precise wants which they are to supply. Not only is professional knowledge necessary to secure the best management, but a complete practical knowledge of the details of management is necessary to secure the most satisfactory application of professional skill to the works. To know how best to design and construct the works, the engineer must know how they are used; and to know how best to use the work, the managing officers must have engineering knowledge. The conclusion seems unavoidable, that the engineer should have the management of irrigation. * * * I believe that there is one thing only which leads with certainty to success and progress, and that is knowledge; that there is no condition of affairs in which improvements of great value may not be made by the help of increased knowledge; and that, of all places in the world where such improvements may most reasonably be hoped for, India stands very prominently forward. I reject the doctrine that revenue officers, avowedly quite devoid of all the special knowledge which is required for anything but an empirical management of the supply and distribution of water, are proper persons to be left in charge of such a duty one day after it becomes possible to replace them by persons possessed of such knowledge. I dispute the position that, under a reasonable system, professional engineers would be one whit less capable of dealing justly with established rights to water-supply than the district revenue officers, or less careful of the interests of the community and of the public revenue dependent on the efficiency of the irrigation, or less able to command respect and co-operation from the people of the country in which the works lie. On these points we have direct evidence, obtained from actual experience in Upper India, that professional engineers are to be trusted quite as fully as revenue officers; and on general grounds it may safely be predicated of the professional officers that, inasmuch as their exact knowledge of the things to be done will necessarily be more complete, those things will be better and not worse done by them. With no less confidence do I assert that great and valuable improvements may, without the smallest doubt, be made in the irrigation works in all parts of India, and that the scope and necessity for improvement is especially great precisely where the non-professional system of management has till now been followed. As to questions of law, rights, and customs, so far as these really affect the management of irrigation, I can conceive no reason why they should not be as well understood by a specially-trained class of engineers as by the revenue officers."

The Government of the North-Western Provinces, reviewing Colonel Strachey's memorandum, remarked as follows:—

"There is no question in these provinces as to the charge of the works, supply, and distribution being in the hands of the canal officers. The assessment of water-rate, whether by measurement or value, must also, so far as present experience goes, remain with the canal officers. The collection of the water-rate used also to rest in the canal officers, but that has been transferred to the collectors, and, it is generally agreed, with advantage. * * * In its resolution, the Government of India call upon this Government to say whether the engineer may not be relieved of the burden of a great portion of his present administrative duties by the constitution of a separate department. * * * In such a department there would be the assessment of water-rate and of miscellaneous revenue and their collection, police duty, including summary adjudication of disputes, and the preparation of cases for prosecution. No doubt there is here a great array of business, which cannot be dissociated from canal administration, and which yet presses heavily on the canal officer, and must often render difficult the effective discharge of his professional and more special duties. If a separate department, with a staff sufficient to take up the whole of this business in direct subordination to the superintending engineer, were instituted, the Lieutenant Governor admits that it would be a great relief to the canal officer. His Honour does not, however, see the way to recommending such a measure. The expense would be very great; and the Lieutenant Governor is not altogether certain whether a co-ordinate and independent administrative branch might not affect the authority and influence of the canal executive officer."

Experience in the Punjab fully confirms in every particular the reasons set forth in the above extracts for entrusting the engineer in charge of the works with the distribution of the water and the assessment of the water-rate. From the nature of his duties, the canal engineer has the most intimate knowledge of the necessities and capabilities of the various tracts of land in his division, and therefore knows best when to allot the water, and what quantity to give. Again, his special knowledge, together with the records of the allotment, qualifies him to deal with the measurements, assessments, and the various complaints and questions which arise therefrom. It is believed that no other official in the district possesses either the requisite information or has time to take up this class of business; and if special officers were appointed to carry on this work, additional expense and divided responsibility would be involved, and both are to be deprecated. Lastly, the system which at present obtains in this province has had a long and fair trial, and is found to work satisfactorily.

It will be seen from the foregoing remarks that it is not considered that the system at present followed in the Punjab requires alteration.

A special law is undoubtedly required for the proper administration of canals. In the Punjab there is such

CH. IV. QN. 21 AND QN. 22.

PUNJAB.

a law, viz., Act VIII. of 1873. The rules under this Act, having also the force of law, have only lately been sanctioned, so that there has been as yet but little experience of their working. These rules, however, are the out-come of very considerable discussion and criticism, and are, moreover, for the most part based on the results of observation and experience, and there is but little reason to doubt that they will work satisfactorily; so far, at any rate, no serious complaints against them have been brought to light.

Answer to question 21.

Mr. E. O'Brien.—The system of canal administration is as follows:—The canals are managed by the deputy commissioner, a native superintendent of canals, the tahsíldárs, and a committee of the irrigators on each canal. The canals run, in favourable years, from the middle of April to the middle of September. During the running season, the committee of irrigators, and an official called the mírab, regulate the distribution of the water; but every matter has to be referred, through the tahsíldárs, to the superintendent and deputy commissioner.

When the canals have ceased running, the committee of irrigators, tahsíldárs, and superintendent of canals decide what amount of silt clearance, what improvements or repairs, should be executed, and how many labourers will be required for the work. The number of labourers is practically fixed by the superintendent of canals. When the number has been fixed, a petition has to be obtained from the irrigators, asking to be allowed to supply the number of labourers fixed. This is necessary, for the theory is that the canals of this district are managed by the people themselves, and are maintained by labour voluntarily supplied by the people. The number of labourers required is distributed over the area irrigated the year before, and each irrigator is required to supply the number thus assessed. Then a proclamation is issued, the labourers are called out, the annual clearance and repairs begin.

A clerk is appointed to keep the roster of the labourers present and absent, and at the end of the work each irrigator who has not supplied his quota of labourers is debited with the number of labourers which he has not supplied at the rate of 8 annas per man absent per day. These fines on absentees are credited to a fund for the general improvement of the canal.

The members of the committee on each canal are remunerated by being absolved from supplying a portion of their quota of labourers. The tahsíldárs are responsible for collecting the fines on absentees, which are the only canal dues in this district.

I think that the functions of the engineer in charge of the works and the technical business of the water-supply, and those of the officer who distributes the water, secures water to the extension of irrigation, and realises the canal revenues, should be combined in one person. If it is not combined in one person, the persons responsible for each part of the duties can only be:—

1. The engineer in charge of the works.
2. The deputy commissioner who would distribute the water.

I have seen the canal administration here for five-and-a-half years, where the distribution of water is managed by the deputy commissioner. As a matter of fact, he leaves the distribution of water to get on as best it can, and never interferes with it in any way; and, however much he might wish to regulate it, and however active he may be, he could not find time from his other duties to pay any attention to the distribution. The same thing may be said of his subordinate, the tahsíldár. However energetic he may be, he has not the time, and so leaves the distribution of water to take care of itself.

Answer to question 22.

The system of canal administration prevailing in this district (Muzaffargarh) has been described in the answer to the last question. It is capable of improvement by the canals being put under the charge of a professional engineer, who could devote his time to the work, instead of being, as at present, left to such chance attention as a deputy commissioner, already overworked, and without any special knowledge of canals, can give it.

There are 66 canals in this district, with a length of 514 miles. They irrigate 2,09,081 acres, and have Rs. 2,25,706 of land revenue depending on them. A great canal system like this requires the undivided care of a European professional engineer. Under the present arrangement, the supply of water is either deficient or excessive. The powerful irrigators escape supplying their full quota of labour, and take more than their fair share of water. Works are ignorantly executed, and a great deal of labour is wasted. The Northern India Canal and Drainage Act VIII. of 1873 has not been extended to this district. There are no rules of any kind in force. A law is very necessary for it. If a single irrigator refused to supply labour or pay fines for not supplying, there is no legal means of compelling him, and if he contested the deputy commissioner's power in the civil court the whole system of canal management would break down.

NORTH-WESTERN PROVINCES

NORTH-WESTERN PROVINCES.

Answer to question 21.

Mr. Anderson.—(1.) The officer primarily responsible for the management of a canal division is the executive engineer, or, as the law calls him, the divisional canal officer. He is assisted in the administration of the division by—

(*a.*) Assistant engineer or sub-divisional canal officer.
(*b.*) Deputy magistrate.
(*c.*) Ziladar.

Four or more divisions are formed into a circle, in charge of the superintending engineer or the superintending canal officer; and the entire system is under the chief engineer, who is also secretary to the local government, and under the direct orders of the Lieutenant-Governor administers the department.

(2.) The canal officers are responsible for the distribution of water and the assessments of water-rates. Collections are made by collectors through their tahsíldars.

(3.) The collection of water-rates may be left to the collector of the district, but every other duty in connection with the administration of the canals must be undertaken by specially-trained officers.

(4.) Irrigation, like every other important business of life, requires years of training to ensure success. The officer in charge of irrigation works must not only have received a scientific education, but must have good practical knowledge of the profession of an engineer to admit of his maintaining his works in working order, to enable him to distribute his water to the best advantage. Not only is this scientific and professional knowledge requisite, but also a knowledge of the soil and meteorological condition of the country, the tenures under which the land is held, the ordinary practice of agriculture, and, last but not least, the habits and customs of the people.

Great as has been the advance made during the last few years in the economical distribution of water, the field for further advancement is still large. But it is the adept, and not tyro, who will be able to take full advantage thereof.

Answer to question 22.

(1.) The system in vogue in the North-Western Provinces is briefly:

(*a.*) Assessments realised by collectors,

(*b.*) All duties relating to management of works and distribution of water performed by canal officers.

(2.) The present system is certainly open to improvement, but the improvement is taking place daily. By compelling every young officer to pass not only the engineer and law examination required at present, but also an examination in land tenures, nature of soils, &c., the improvement would be hastened. But these special tests would need special emoluments. Remunerate the canal officer in proportion to his responsibilities, and the end desired will soon be attained.

(3.) A special canal law is certainly necessary to proper administration.

(4.) Yes; Act VIII. of 1873. It has worked satisfactorily.

Board of Revenue.—The system of canal administration will be explained by the Secretary to Government in the Irrigation Department. The canal executive engineer is primarily responsible for distributing the water; the district (Revenue) officer (the collector or deputy Commissioner of the district) for collecting the dues. The 3rd minor question, inside question 21, is somewhat confused. No one officer is responsible, nor should any one officer be responsible, for (1) seeing that the available water is distributed equitably to the land that most requires it; (2.) securing water to the extension of irrigation; (3.) the realisation of the canal revenues; and (4) their due assessment and increase. The Board are of opinion that the functions to be discharged in connection with canals may best be classified under two heads—

1. Engineering.
2. Revenue.

The first, which will comprise—

(*a.*) Professional charge of the works.

(*b.*) The "technical business of the water supply."

(*c.*) Equitable distribution of the available water.

(*d.*) Securing water to the extension of irrigation, should devolve on the canal executive engineer.

For the second, viz.:

(*e.*) Realisation of the canal revenue (excluding all canal dues other than owners' rate and occupiers' rate).

(*f.*) Assessment of owners' rate and occupiers' rate, the collector of the district should be responsible. What is meant by an "officer being responsible for increase of canal revenues?" The Board do not understand. All the functions noted above (taken from the Commission's question) could not be combined in one officer, *e.g.*, the officer responsible for the realisation of the canal revenues and their due assessment could hardly be placed in charge of the works and be entrusted with the "technical business of the water-supply." Nor would it be advisable to make over the duty of the realisation of the canal revenues (*i.e.*, owners' rate and occupiers' rate) to the engineer in charge of the works, &c., a duty which could be more easily discharged by the officer responsible for the collection of the land revenue, for which an establishment is maintained under his orders.

Question 22 has been partly replied to in answer 21. So long as the (i.) engineering, and (ii.) revenue functions, are kept distinct, and discharged—the first by the canal executive engineer, and the second by the collector of the district, the system is sufficiently satisfactory. No special canal law is "necessary to admit of proper administration," which may best be regulated by the local government under the North-Western Provinces Canal and Drainage Act.

Col. Brownlow.—In the North-Western Provinces and the Punjab the canal officers maintain the works, distribute the water, and assess the irrigation revenue; the district officers collect the revenue on the canal officer's warrants. I am strongly in favour of the maintenance of the present system of canal administration in these provinces. I hold that in designing a canal the revenue authorities of the tract commanded by the proposed work should be unreservedly and fully consulted as to the wise and equitable distribution of the available volume, and that their wishes should, as far as is possible, be exactly complied with. But once the distributaries have been dug and the canal is in full operation, any further changes in distribution ought to be most cautiously undertaken, deprivation of canal irrigation involving most serious results to the agricultural community dependent on it. No canal officer, either in the North-Western Provinces or the Punjab, has the power to effect such a change without the fullest sanction of the Government in Revenue Department. In like manner no increase can be effected in water-rates without the sanction of the local government and the Government of India. The realisation of the canal revenue is already in the hands of the civil officers, so that the concluding question of the paragraph under reply resolves itself into one regarding advisability of transferring the assessment of canal revenue from the hands of the canal into those of the revenue officers. To this question I unhesitatingly answer in the negative. The only reason that I have heard put forward in support of the proposal is the supposed economy that will be effected by the measurement of canal-irrigated areas by the district revenue establishment. But the district revenue establishment has its hands already over-full of work (I presume that no reasonable man wants the village patwari to do more than is already expected of him), and the canal revenue establishment is equally overworked; so that the suggested economy is quite visionary, and the proposed transfer will only result in an increase to the district revenue establishment equivalent to, or exceeding, the present canal revenue establishment. As regards the supervision and control of the canal measurements and assessments, believing that district officers have already as much to do as they can possibly perform, I fail to see how proper supervision can be secured without the appointment of a special additional civil establishment for the purpose. And in this connection, I hope I may be permitted to quote an analogous case, which may illustrate the economy likely to result from the proposed arrangement. On the Eastern Jumna Canal the collections of canal revenue were formerly effected by the canal establishment, and their cost was never in excess of 1 per cent. of amount collected. The collections were transferred to district officers on the plea that the payment of even 1 per cent was useless expenditure; it was just as easy for the tahsildar to collect the water-rate while collecting the land revenue as to collect the latter alone. *The collection of canal revenue now costs more than 5 per cent. of amount collected.* So much for the economy of the scheme. Now to consider its efficiency. I presume that no one will question the advantage of promptness in assessment of demand and in record of results of a season's work. We have now, I venture to assert, attained to very commendable promptness in assessment and record in the North-Western Provinces and Punjab, where the responsibility for the performance of these duties rests with canal officers. The interminable delays and difficulties in arriving at any accurate knowledge of the results of working a Government irrigation canal in Madras, where the assessment and realisation of canal revenue lie with district officers, are too well known to require much setting forth. However I give below* the last

* *Extract paragraph 9 of letter No. 2418, dated 21st October 1877, from Acting Collector, Cuddapah, to Secretary, Board of Revenue, Madras:—*

"At present it appears to be pretty near a hopeless task to expect punctuality and promptness in the submission to collector of the revenue accounts connected with canal irrigation. The whole machinery of this department has been disorganised by the famine, the intelligent men of all divisional and 'taluq' establishments are absent upon other duty, and their places are in general supplied with anything but efficient substitutes. Added to this, the famine has given rise to the necessity for preparation of numerous extra accounts and returns, and the 'reddies' and 'curnams' are being constantly hurried by the work and inspections called for by the administration of village relief."

CH. IV. QN. 21 AND QN. 22.

NORTH-WESTERN PROVINCES.

wail that I have heard on the subject; and to my mind it illustrates very forcibly the objections to throwing on the collector and his establishment the management of everything connected with the district, instead of leaving special work to be managed by specially-trained establishments.

But, oblivious of the argument from economy, an opponent may urge that it is never intended to throw all this extra work on the existing revenue establishments. We shall then have two parallel establishments working side by side, one for the maintenance of the canal works and the "technical business of water-supply," the other charged with the distribution and extension of irrigation and with assessment and collection of canal revenue, and, in order to bring the double establishment within reasonable limits of cost, the executive and administrative charges will probably be doubled in extent. Now, in doing this, we shall at once weaken and relax the close personal supervision which is the great secret of successful management of canals, or indeed anything else, in India or elsewhere. A canal executive or assistant engineer has now a charge of reasonable extent, and while looking after the maintenance of the works in that charge has time to look thoroughly into the management and distribution of water-supply and assessment of irrigation, all of which are closely connected with and immediately contiguous to his works. With a charge doubled in extent, very much of the time now given to inspection will be necessarily lost in moving to and from distant points of the charge. Again, the most economically managed canal is that on which the expenditure on maintenance of works and clearance of channels is best proportioned to the results attained. Separate the responsibility for maintenance from that for distribution and control of water, and you will at once increase the expenditure on maintenance. A canal officer can now often reduce expenditure on clearance of distributaries by a little skilful management of the water-supply, but if he feels that this latter business is in the hands of another man he will, to save himself from any chance of recrimination, spare no expense in keeping his distributaries perfectly cleared at all times. And the *personnel* of the canal revenue establishment would certainly deteriorate if it were transferred to the control of the Civil Department. Under the present system the distribution of the water and measurement and assessment of irrigated areas are closely watched by public works officers, who are well paid, and have good prospects of rising in the department if they do their duty efficiently. We thus get fresh energetic men with every incentive to work well. A mistaken selection can be at once remedied by transfer to another and more suitable branch of the Public Works Department. Under a system of management by civil officers, we should not be able to afford more than one or two covenanted civilians for general direction and control, and all the practical management of distribution and irrigation, now thoroughly looked after by active young assistants looking for promotion to higher charges, would fall into the hands of deputy revenue superintendents, with less pay and incomparably inferior prospects of promotion. We could not afford to pay such men more than about Rs. 500 a month as maximum salary, and, as the irrigation work is of a very special nature, it would be difficult to draft off bad selections and provide for men too old or infirm for the active out-door work essentially necessary for the proper discharge of the duties of the office.

Answer to question 22.

I think that the working of Irrigation Department in the North-Western Provinces and Punjab, under Act VIII. of 1873, and the rules issued under that Act, is satisfactory.

BENGAL.

BENGAL.

Colonel Haig.—We have two systems of canal administration in operation—one in Orissa and Midnapore, the other on the Sone canals. In the former the distribution of the water alone is in the hands of the engineers, the issue of leases, permits, measurements of areas, and collection of water-rates being managed by a special revenue establishment under the control of the collector. On the Sone canals the distribution and all revenue matters are managed by the engineers, the collections alone being made by the collector on demand statements furnished to him by the executive engineer.

Which of the two systems is the best it is not possible as yet to say, that on the Sone canals having only been introduced last year. The Orissa and Midnapore system has been in operation for several years, and has worked very satisfactorily. Personally, I am rather inclined to give it the preference, as likely to be the cheapest of the two, and to promote the extension of irrigation (in which the special revenue establishment is just as directly interested as the engineer) as much as the other, without the disadvantage of taking up the time of the engineers with a mass of petty revenue work which can as well be done by natives under the control of a revenue officer. A few years, however, must elapse before the Sone system, which is the same as that of the North-Western Provinces and Punjab, can be properly tested. It certainly has the merit of inspiring the engineer establishment with a certain enthusiasm for irrigation, and a deeper interest in, and more intimate acquaintance with, the native agricultural population and their methods of cultivation. But it may be a question whether the time thus devoted to agricultural and revenue questions might not with more advantage be employed in more strictly professional duties.

BOMBAY.

BOMBAY.

Answer to question 21.

Mr. Hughes.—1. The system of canal administration is described in paragraph 27 of the Revenue Report for 1876–77.

2. The canal officer is responsible for distributing the water, and the collector collects the dues on statements framed by the canal officer; *vide* Canal Return IV. of accompanying Canal Rules.

3. No change in the present system is, in my opinion, desirable, and my reason for saying so is that it has been found to answer very well. There is generally a very good understanding between the officers of the two departments, and complaints in regard to the management of the works are very rare indeed.

Answer to question 22.

1. See rules appended. 2, 3. A special canal law is, in my opinion, necessary for proper canal administration. It would legalise the present canal rules, and would clearly define the powers of the canal officer and give him powers which at present he does not possess. This is specially important in regard to the construction of distributing channels, in regard to which there are frequently difficulties. For instance, A is desirous of taking water which B is not, but the channel from the canal or main distributary to reach A's land must pass through B's and B refuses to allow it, and at present Government or the canal officer is powerless to interfere.

At present no law exists for punishment for waste of water, for the surreptitious use of water, or for enforcing the minor distributing channels being kept in repair. Nor are there powers for assessing indirect irrigation. The Canal Bill which has been proposed will meet all these difficulties.

Answer to question 21.

Mr. Propert.—Canals are in charge of the Irrigation Department, and are administered according to the Canal Rules of 1876 (Bombay Presidency). These should be consulted. Water is distributed by the irrigation officers, and the dues are collected by the Revenue Department. It has been found, with the assistance of subordinates, quite possible and convenient to combine the functions of the engineer in charge of the works, and the technical business of the water supply, with the duties of water distribution and canal revenue assessment, and as a matter of fact the Executive Engineer for Irrigation does without difficulty perform all the above duties. The realisation of the canal revenue, however, is undertaken by the Revenue Department. The arrangement is, I consider, equitable, inasmuch as the latter department has special facilities for the collection of all kinds of revenue, which the Irrigation Department certainly has not.

Answer to question 22.

The canal administration is carried on in the Bombay Presidency by means of a code of departmental rules. There is no special law on the subject. As far as I am aware, the rules work well, and I know of no actual necessity for a special law.

MADRAS.

Mr. Sullivan.—In all large irrigation works, such as the Godavari, Kistna, and Cauvery systems, the rule is for the main supply of water to be under the control of the officers of the Public Works Department. To quote from a note by the Chief Engineer for Irrigation, printed with proceedings of the Madras Government in that department, dated 5th March 1873, No. 713: "The duty of the Public Works officer is, or should "be, confined really to regulation, which includes, of "course, distribution in bulk, if I may so term it, but "not distribution in detail. The regulation of the "water-supply in the Kistna, the Godavari, and in "all systems of irrigation in which any such regula-"tion at all is practicable, should, down to the sluices "which supply the lands of one village only, be "vested in the Public Works officers. It appears "essential that such should be the case so far, because "an independent authority is required to manage the "supply until it passes into the hands of the village "community. If a channel supply two villages, it "would not do to let each village manage the sluice "at the head of its channel, otherwise the other "village might and probably would suffer." The Government, in passing orders on the subject in the proceedings above quoted, directed that "instructions "be issued in the Revenue and Public Works Depart-"ments absolutely restricting the functions of the "subordinate officers of the latter department to the "regulation of the water-supply in channels which "supply the lands of more than one village, and "vesting in the village officers the charge of the "water supplied to single villages from the moment "it quits the regulating sluice, over which, however, "they will have no control." The Board of Revenue were directed to report after consulting with collectors from what date the arrangement could take effect, and the reference elicited the fact that, with a few unimportant exceptions, the system was already in force throughout the Presidency, and was found to work satisfactorily. Under these circumstances, no special legislation seems to be called for in connection with canal administration so far as irrigation is concerned. The objections to making the Public Works officers in charge of irrigation canals responsible for the collections of the additional revenue derived therefrom, the extension of the irrigated area, and the equitable distribution of water, are twofold. In the first place, owing to the paucity of engineers, it is with difficulty that they can cope with their own legitimate work, and, if fiscal duties of the nature indicated are imposed upon them in addition, the burden will be greater than they can bear. These great systems of irrigation, where the flow of mighty rivers is suddenly arrested in view to their being made to pay a fertilising tribute to the thirsty land before they are allowed to resume their natural course towards the ocean, form a very anxious charge, and tax the best energies of the specially-trained body of men to whose care they are entrusted. Then why assign to them a task alien to their profession, for the performance of which another agency exists? Secondly,—even supposing the engineers had time to devote to such matters, the practice would be objectionable on the ground that considerable friction between them and the officers charged with the collection of land revenue would be inevitable. At present this and the revenue derived from irrigation are both collected by one agency—an agency with which the ryots have been accustomed to deal from time immemorial, and which has at its sole disposal the organised service of the villages. But, if the engineer is to collect the water-rate and the tahsildar the land-revenue, the village officials would be at the beck and call of two masters whose joint requirements it would be impossible for them to satisfy, and general confusion would be the result. It would be utterly impracticable to work such an arrangement.

Lieut.-Colonel Mullins.—Canal Administration.—In Madras, as regards the larger modern works, the canal officers are responsible for the distribution of the water. In the Tanjore delta the distribution by canal or public works officers is limited to the equitable division of the supply between the several rivers which there take the place of canals. Public works officers have generally nothing to do with the distribution of water from tanks, which is managed by the people cultivating under the tanks. The dues or revenue is assessed and collected by the revenue officers, and only in a few instances and not as the rule are canal officers consulted as to the remissions to be granted for alleged failure or excess of water. Were the revenue work in connection with canal irrigation thoroughly done by those officers there would be no advantage in making any change in the present system, and it would be in every way better that it should be so thoroughly done by those officers than that the duty should be transferred to the canal officers, who have more than sufficient work to do of a kind which can be done by them alone. That there was revenue work to be done which has been left undone is evident from the fact that any definite information as to the extent and revenue of the irrigation under even the most important systems, such as the deltas, was not forthcoming until a few years back, the earliest statement for the Godavari and Kistna being for the year 1871–72 (Fasli 1281), while for the Cauvery delta, the Penner anicut, and the rest of the systems for which capital and revenue accounts are to be maintained, no statement of the particulars of irrigation has yet been prepared. The statements for the first-named deltas were also very imperfectly prepared, and comparison of the details for successive years led to the discovery of many discrepancies, and to corrections and explanations, which latter, being in many cases essential to the understanding of the statements, should have from the first been recorded thereon.

Ch. IV Qs. 21 and Qs. 22.

Madras.

The Proceedings of Government noted below * indicate how much remained to be done before the work of the revenue officers could be deemed to have attained to a reasonable standard of sufficiency.

It is impossible, of course, for any public works officer at any rate to say what revenue has been lost, because no data for an examination are on record, but it must be assumed that for effective check the superior revenue officers must know what areas are under irrigation, where they are situated, and from what canals supplied, and they have not in any case until recently had such information, and have not got it generally even now.

The canals supplied water, and the people were very willing to take it, and so as regards the Godavari and Kistna deltas the works were as irrigation works and financially successful. Had the conditions been otherwise, as in the case of the Madras Irrigation and Canal Company's canal from Kurnool to Cuddapah, the results which have, in a great measure, there followed from inefficient revenue administration would have most prejudicially affected the financial prospects of the delta systems.

In the Cauvery delta, in the absence of a revenue survey or anything more accurate than the rude measurements of the village accountants, which measurements, moreover, were in many cases taken originally from starting points which have long since ceased to be capable of identification, really efficient revenue administration is out of the question. It may be that the Government get a proper revenue from the irrigated lands or their revenue may be little or much less than it should be, but under existing circumstances definite and accurate information on these important matters is unattainable and adequate supervision and control are impossible. Encroachments here and elsewhere are common, and so little is their injurious effect appreciated even where river embankments and channel banks have been scarped to extend the area of the fields, that these encroachments, when most apparent and confirmed by the fields being in excess of the registered areas, are deemed the property of the ryots, and if it be found, as is sometimes the case, essential to recover such land in order to provide for the safety of the banks, such land has to be purchased, and often at a very high price.

Legislation.—There is a great want of discipline generally in the management of irrigation works. Canal and public works officers have never been furnished with any powers for the enforcement of good order and the prevention of improper interference with the distribution of water. The definition of mischief in the penal code does not admit of the most mischievous and prejudicial acts being dealt with criminally, and there is no special law to remedy this defect. The enforcement of discipline by civil suit is, of course, impracticable, and Government would be often unable to prove for damages in such suits, as it might be held that the ryots rather than the Government were the sufferers by the wrongful acts.

A law providing for the prompt repression of all wrongdoing in connection with works of irrigation is much required, and canal officers in those cases in which the detailed management of the irrigation is in their hands should be adequately empowered to enforce the law and the rules and regulations made under it.

It is a notable instance of the mistake which has been made in leaving public works officers in charge of irrigation works without power to enforce rules, that in 1856-57, when the responsibility for the maintenance of irrigation works generally throughout the Presidency was transferred from the Revenue to the Public Works Department, no provision was made for the enforcement of kudimaramut, *i.e.*, of the obligation of the holders of irrigated lands to execute petty repairs to the irrigation works on which such lands are dependent for their supply of water. The Revenue officers ceased to attend to the matter, and the public works officers could do nothing beyond for a time refusing to do what the villagers ought to have done. The works suffered, and ultimately, when taken up for repair, the deterioration due to the neglect of the kudimaramut obligation had to be included in the estimates. The absence of efficient arrangement, which must, it is considered, be attributed principally to an idea which prevails in this Presidency that no public works officer is fit to be entrusted with any legal powers, has cost the State a great deal of money, and the neglect of kudimaramut has been at least as injurious to the people as to the State.

Major P. Montgomerie, R.E.—Irrigation Administration.—(1.) In the Madras Presidency, where the irrigation works are numerous and scattered over large tracts of country, their successful conservancy and further development must, in a very great measure, depend upon the system of irrigation administration, and it is absolutely necessary that whatever system is in force it must be administered by one head, whether consisting of a single individual or a collective body. The failure of the present dual arrangement in force in Madras is evidenced by the almost dead-lock * which occurs in furnishing statistics of revenue, &c. on which to base financial measures and engineering proposals, and by the neglect to utilise during the first stages of the late famine the existing organisation of the Engineer Department (such as it was) on the irrigation works of the country.

(2.) The impossibility (at least in the Madras Presidency) of combining in one individual the functions belonging to the collector of the revenue and the conservancy engineer makes the unity of the governing body all the more necessary.

(3.) The Board of Revenue (if it is to continue an institution of the land) should, as its name implies, be held responsible for the irrigation administration of the Presidency; but it must be reconstituted with a due proportion of the professional element. Whatever other changes may be considered advisable in the constitution of the Revenue Board, the addition to it of the Chief Engineer for Irrigation as a member, and his assistant as one of the secretaries, is necessary, and would cause little or no extra expense to the State.

(4.) The Revenue Board having been reinstated as the responsible head of the irrigation administration, it would be necessary to define the limits of the executive charges. These should be conterminous with the jurisdiction of collectors except in the deltaic districts, where the existing arrangements of divisions might remain, or be even somewhat strengthened. The areas of a few of the present districts, such as Bellary, Madura, Salem, &c., are probably too extensive for a single executive charge; but as they are also admitted to be too extensive for the charge of a collector, the natural suggestion to make is, that these districts should be re-arranged.

(5.) The executive engineer in charge of a district should be considered purely a conservancy engineer, to keep in thorough order all existing irrigation works including the construction of the necessary escapes and other masonary works connected with them; and he should not be required to investigate elaborate schemes of irrigation, although it would be his duty to suggest all necessary extensions and improvements, the cost of which would be beyond the local power of sanction. The local power of sanction should be fixed at a sum not less than Rupees 2,500 for original works, and for repairs any amount within the limits of the grant made to the district. The system of kudimaramut or customary labour must be revived, and an act to faci-

Proceedings of Madras Government, No. 2085, dated 22nd July 1875.

* *Vide* Secretary of State's Despatches, No 22, dated 20th December 1877, and No 19, dated 26th September 1878, referred to in Proceedings of the Madras Government, Public Works Department, No 993-I, dated 5th December 1878, and Government of India's Letter, No. 622, dated 7th October 1878.

litate the conservancy of rivers and channels should be passed, and the conservancy engineer, at least in the more important irrigation districts, must be entrusted with magisterial powers to enable him to enforce the conditions of the law. By this arrangement he would be more intimately associated with the collector of the district, and would hold a recognised position in its administration.

(6.) The investigation of all projects likely to cost more than the amounts within the local power of sanction should be conducted by an entirely separate staff of engineers and assistants, &c., whose salaries would be debited to the projects on which they are employed; and until matured projects are well in advance of the labour available for carrying them out without the enhancement of rates, this extra staff should be strong in numbers. Besides the investigation of new projects, this extra staff would be employed in grouping and estimating for the repair of the ordinary irrigation works of those districts which are most behindhand; the execution of the repairs being carried out, as already explained, by the local conservancy engineer, and any extensive new work by a special man, either directly under the conservancy engineer or independently, as may be most convenient.

(7.) Executive engineers of the special staff would be eligible for employment, as district engineers, and *vice versâ*. But executive engineers in charge of districts and divisions or special works will alone be in account with the examiner of public works accounts.

(8.) To ensure discipline in the districts and the intelligent investigation of projects there must also be superintending engineers. These officers should be responsible for the sanctioning of local estimates, and be the medium of communication between the executive engineers and the Board.

(9.) To sum up, the foregoing proposals may be stated to be briefly as follows:— Ch. IV Qs. 2, and Q. 22

1st.—The more intimate association of the Revenue and public works officials, without which the interests both of the Government and the ryot must suffer. Madras.

2nd.—The placing under one responsible head the irrigation administration of the Presidency, by which the Chief Engineer for Irrigation will be in a position to collect and furnish all necessary statistics without in any way being relieved of the responsibility which must always attach to the chief adviser to Government in irrigation matters.

3rd.—The entire separation of the duties of the conservancy engineer from that of the investigation of projects, by the provision of a special staff for the investigation of projects, and to assist in grouping and estimating for the repairs of existing irrigation works in those districts which may be behindhand.

4th.—The revival of the system of kudimaramut, and the passing of a law to facilitate the conservancy of rivers and channels and empowering the conservancy engineer to carry out the conditions of the law.

(10.) All these proposals might be carried out without any increase to the cost of the existing department, and with hardly any alteration in the present location of the district officers; and if it be decided to make the cost of the special irrigation staff a permanent charge against the department, a very efficient staff could be provided from the Rupees 1,15,152, the amount by which the cost of the Public Works Establishment has lately been reduced in accordance with Proceedings, Madras Government, Public Works Department, No. 3,674–W., dated 18th September 1878.

QUESTION 23.—SLOW EXTENSION OF USE OF CANAL WATER. Ch. IV. Qs. 23.

Why has the extension of the use of canal-water been commonly so slow? What has been the nature of the obstacles, and how can they best be avoided or removed? Have any of your canals practically reached the state in which any further extension is not likely, or is likely to be small? Say how far this is the case in each? Are difficulties met with in preparing land for irrigation for the first time in the way of subdividing fields, or levelling the surface, or formation of water-courses which require more time and money than can be supplied by a limited population otherwise than slowly? If such difficulties are met with, how may they best be removed? Does the existing system provide sufficiently for making advances to cultivators to adapt their land to irrigation, and if not, what changes are desirable? Does not shortness of supply during the hot season materially affect progress of canal irrigation?

PUNJAB. Punjab

Captain Ottley.—It may be confidently stated that, as a broad general rule, the extension of irrigation in all parts of the Punjab has been the reverse of slow. The people ordinarily apply eagerly for the use of canal-water as soon as a supply is available and they are satisfied that it is constant. An instance of the necessity for permanency occurred on the new rajbuhas constructed from the Katora Canal, which is one of the Upper Sutlej Inundation series. When these rajbuhas were first constructed there was a rush of applicants for water, but during the first season the supply of this canal failed owing to a change in the course of the river and the consequent silting up of the head.

This unfortunate occurrence deterred the cultivators from going to the expense of making proper water-courses, and canal irrigation fell for the time into disrepute. It was found possible, however, the next year, to secure a better head for the canal, and the constant supply which was thus maintained dissipated the fears which the cultivators had entertained, and they commenced on all hands to complete their channels and used the water, and the latest reports exhibit a very remarkable extension of irrigation on these lines.

On the Bari Dohab Canal the extension of irrigation, quick as it was, would have been still quicker had there been funds enough at first to enable the distributaries to be completed at the same time as the canal. Unfortunately this was not the case, and the demand for water was invariably ahead of the power of supplying it.

To ensure a rapid extension of irrigation in the Punjab, on the opening of a canal all that appears necessary is to provide (1) an absolutely certain supply of water, and (2) a proper system of distributaries (completed in all respects at the time the water is admitted) to convey the water within easy reach of the cultivators; and the reason of this may be stated to be that every second or third year there is ordinarily a failure of seasonable rain-fall during one or other of the crops.

CH. IV. QN. 23.

PUNJAB.

On the Western Jumna Canal, no very great extension of irrigation is to be expected so long as the present supply at the head is maintained. It is hoped that the remodelling of part of the main line, which is now in progress, as well as the construction of proper distributaries and the introduction of pipe outlets in place of the large openings formerly granted, will prevent the present lavish use of water and thus render a certain extension of irrigation possible, but no estimate of what that extension will really be can be made. If, however, this canal is ever enlarged, as has been proposed, to the extent of carrying an *additional* supply of 2,000 cubic feet per second during the kharif season, there would, of course, result a very large extension of irrigation.

The Bari Doab Canal is open throughout the entire length proposed under the latest estimate. There will certainly be an extension of irrigation, but this will principally result from the tract of country traversed by the Kasur and Sobraon branches, into which water has only lately been admitted in small quantities, and the distributaries from which are not yet completed on their entire length.

On these rajbuhas it has been reported that the main difficulty encountered in the development of irrigation has been the poverty of the cultivators, which, it is alleged, has prevented the more rapid construction of the water-courses, which must now, according to the latest rules, be completed before the admission of water is permitted.

As soon as this was brought to the notice of the local government, the canal officers were desired to instruct the cultivators that, on proper representation being made to the district authorities, no obstacle would be thrown in the way of their obtaining "takávi" advances. This appears to have solved the difficulty raised, and nothing further appears to be required.

As regards the question of shortness of supply during the hot season, it may be sufficient to state that this difficulty is practically unknown in the permanent canals of the Punjab, as the rivers from which their supplies are drawn are fed from the snows, and are not dependent on rain-fall.

The inundation canals, although fed from the same, or similar, rivers as the permanent canals, are subjected occasionally to short supply. This is due sometimes to an insufficient rise in the river, but more frequently to some change in its course, which, by interposing a sand-bank between it and the canal head, prevents a proper supply passing down the channel.

Mr. O'Brien.—The cause of the slow increase of canal irrigation has been inefficient administration. No other reason can be alleged why the cultivation in the canal tracts has not increased *pari passu* with the rest of the district. The cost of irrigation, Rs. 0–10–6 per acre, is very low. The soil of this district produces superior crops. Little labour is required to bring waste land under cultivation. The canals may be all said to be in an unsatisfactory condition, inasmuch as the defects in the administration have not been removed. During the 16 years that preceded 1875 the canals were absolutely neglected. Attention has recently been called to them, and some improvements have been made of a temporary nature. No canals have reached the state in which further extension is not likely. There are 15,35,475 acres of culturable waste in this district, to which canal irrigation could be extended. The district is very favourable for the extension of canals. The hot-weather level of the Indus is higher than the greater part of the district, and there is a steady slope from the Indus to the Chenab, and no dorsal ridge between the rivers. The difficulties in preparing land for irrigation for the first time are small. There is not a rock in the district.

Mr. J. B. Lyall.—The extension of the use of canal water is not slow in the case of these inundation canals in the south of the Punjab. It has been slower than it ought to have been in certain places, but this has been because the supply of water has been scanty, owing to mismanagement of the repairs and clearances of particular canals. Such slow extension has not been caused by reluctance to take water or by difficulties in preparing the land for irrigation.

Major Grey.—I have not found the extension of the use of inundation canal water slow. In 1875 the incomplete Ferozepore canals irrigated 43,330 acres. In 1876, when still incomplete, they irrigated 64,675 acres. What they have done since I completed them and left, I do not know; but I know that the only delay in the development of the irrigation was that unavoidably incurred in the construction of distributaries. The same applies to new works in the Bahá-wulpur State, but it is to be borne in mind that the water is taken free of charge in both instances.

There is a certain difficulty and delay in the construction of distributaries. Unless professionally aligned, zamindars are, after experience of failures, very shy of attempting large distributaries; and, without large distributaries, the cultivation of a canal is limited to a narrow marginal strip, such as can be reached by the irrigation cuts taken from the canal direct. Again, such distributaries require money for their construction, and the existing system does not provide adequately for the supply of money. Takávi will never be freely taken while the grants are hampered with the present conditions.

Accidents of season do not affect the progress of inundation canal irrigation. The zamindars expect such. Without such accident there is no shortness of supply in the hot season.

NORTH-WESTERN PROVINCES.

NORTH-WESTERN PROVINCES.

Board of Revenue.—The Board have no reason to suppose that the extension of the use of canal water has been so slow in these provinces as to call for inquiry and explanation. The Commission appear to have had the canal works in Orissa and Madras in view. The Board are not aware of the progress of canal irrigation being retarded by difficulties in the way of preparing land for irrigation, &c. No applications for funds for the adaptation of land to irrigation have ever been made to the Board, nor does it appear that any advances are needed for the purpose. Wherever canal irrigation is required it is readily accepted. Where the canal passes through a tract which does not require canal irrigation (as is sometimes the case) canal water is not taken at first. When kucha wells fall in, or the cost of canal-irrigation is discovered to be less than watering land from a well, the canal will be resorted to.

Mr. C. C. Anderson.—(1.) Owing to the conservatism of the people, where irrigation has been in practice extension or introduction is not slow.

(2.) Doubt if the obstacles can be removed as long as the people remain in their present condition of semi-civilisation.

(3.) Not in the North-Western Provinces. The cry in the North-Western Provinces is the want of water, not the superabundance of it.

(5.) Most of the canals in the North-Western Provinces are not capable of extension of main channels, though there is possibly great room for extension of irrigation. This will be effected by minor channels, a greater economy in consumption resulting from better management.

(6.) Can give no reliable reply to this, as data are wanting to determine the quantity of extension.

(7.) Do not know of any such difficulties.
(9.) Yes.
(10.) Most decidedly, as far as kharif crops are concerned.

Colonel Brownlow.—I do not think that the extension of canal irrigation has been slow in Upper India. In Orissa, I am inclined to believe, from what I have heard, that irrigation has been surreptitiously practised to a much greater extent than the records of the department show. In saying this I have no wish to impute blame to any one. I think that, owing to the character of the climate and configuration of the ground, great difficulties attended the introduction of irrigation in Orissa; that the system of revenue management and of distribution has not been the best that might have been adopted; and that failure has been rendered more conspicuous by the unreasonable promises of results held forth by the designers of the works.* The failure of the Madras Irrigation Company's canal is primarily due to the intermittent supply, the canal being dry for five or six months of each year; secondarily, to high rates and to the character of the country traversed by the canal, which is very well suited to growth of cotton and "jowari," which do not generally require irrigation. In the North-Western Provinces and Oudh, the Sardah Canal and the canals from the Betwa and Keyn are the only ones that occur to me as likely in any way to repay cost of construction. In the Punjab there is plenty of water, but the want of population would bar all prospect of early returns from any large canal west of Lahore.

* The main promoters of the Orissa irrigation schemes were Madras officers, who evidently expected that the same eagerness to avail themselves of canal water would be shown by cultivators in Orissa as had been exhibited by the Madras ryots of the deltas of the Kavari, Godavari, and Kistna rivers. But I am strongly of opinion that the rainfall, from June to October, is much greater in Orissa than in the Madras deltas, and the only returns of rainfall which I possess seem to support this view, which is, I think, worthy of careful examination. In his daily weather reports, the meteorological reporter gives as average rainfall of July, August, and September, at—

Cuttack - - - -	32·43 inches.
False Point - - -	41·58 ,,
Masulipatam - - -	17·79 ,,

I have no means of ascertaining the average rainfall from June to October at Tanjore and Trichinopoly, but suggest that it should be ascertained; also that of Rajahmundry and Coconada, for the Godavari delta, of which the climate must be almost exactly similar to that of the immediately adjoining delta of the Kistna.

Ch. IV. Qn. 23.

North-Western Provinces.

In Bengal, there is, as a rule, too much water, and the ordinarily abundant rainfall will necessarily make returns from large irrigation works more or less uncertain and slow in coming in.

In Madras, the completion of the irrigation works in the Kistna and Godavari deltas ought to be carried out, in my opinion. The soundness of the only other extension schemes in that Presidency that I have seen seemed to me most doubtful. I may mention amongst these the Sungum project for extension of irrigation from the Pennair river; that for a canal from the Tungabhadhra river to irrigate the Bellary district; a proposal for a canal of irrigation from Cuddapah to Nellore; and another for increasing the capacity of the Red Hills and Sholaveram tanks in connection with water-supply of the town of Madras.

There are a number of schemes in contemplation for irrigation from rivers and reservoirs in the Bombay Presidency, but each would have to be dealt with on its own merits, with especial reference to cost of construction, supply of water available, and area and physical character of the country commanded. Difficulties in the way of preparing land for irrigation must be taken into consideration in estimating progress of income from all schemes which command hilly or undulating ground. Such difficulties have undoubtedly checked the progress of many irrigation works in Bombay, and I have been told that they similarly affect the Madras Irrigation and Canal Company's canal in Madras. The Bombay irrigation schemes are, as a rule, either so absolutely unremunerative, or the prospect of their becoming remunerative is so far removed, that I do not think Government in Irrigation Department could possibly afford to undertake or aid in the preparation of land for irrigation. The advisability of making takkavi advances for the purpose is a question for decision in Revenue Department.

Deficiency of supply in the hot season generally means also deficiency of supply in a year of drought, and, when it does, must, of course, prove fatal to the prosperity of an irrigation scheme. Even when it does not imply shortness of supply when the local rainfall is deficient, failure of supply during the hot season must injuriously affect the progress of irrigation, as it effectually bars the irrigation of sugarcane, seed-beds of first-class rice, and other remunerative crops, facilities in the cultivation of which afford a main inducement to resort to a canal.

BENGAL.

Bengal.

Colonel Haig.—Unless irrigation has previously been commonly practised in a tract of country where new canals are opened, so that the value and the proper mode of applying water to crops are generally known, it is probable that the extension of canal irrigation must always be slow at first. The people must satisfy themselves by actual trial what the water is really worth as compared with the price charged for it. This will take time; three or four seasons probably. Another point they will make sure of before they commit themselves to the use of the water is the manner in which it will affect their rents, whether the landlord will raise his rent if irrigation is practised, and if so, how much. They will also be careful to ascertain by trial or observation whether the water can always be got just when it is wanted, or whether there are uncertainties about this, and possibly delays. All that Government can do to hasten the extension of irrigation is to afford the people every facility and encouragement in satisfying themselves upon the above essential points. The proper means for this are—

(1.) The introduction at starting of a carefully-considered system of distribution and revenue management.
(2.) Suitable water-rates. These should be a little below what the people believe the water to be worth, even though through ignorance they may greatly under-estimate its value.
(3.) The extension, as quickly as possible, of village channels. The people should, as far as possible, be induced to make these themselves; but if they will not, it will be cheaper for Government to make them than to let the capital sunk in the main canals and distributaries lie idle for lack of the last and most essential links in the machinery of distribution.
(4.) Whatever rates and system of revenue administration may be introduced at starting should be rigidly adhered to for at least five years.

Half that time will elapse before the villagers even understand what the system is. Nothing is so fatal to success as changes of any kind. As soon as the cultivators are satisfied that irrigation at the rates fixed is profitable, that it is available in all years and at the proper seasons under a system of sale and distribution which is suitable and invariable, and that the use of canal water will not entail any difficulties with the landlords, they will take to it wholesale, and learn

CH. IV. QN. 23.

BENGAL.

to regard it as quite as essential a part of the agricultural system as ploughing or manuring.

In Orissa, every one of these essential conditions to the rapid extension of irrigation was violated from the very first. A rate of Rs. 5 was demanded for rice, whereas experience has shown that Rs. 1-8 is the most that can be hoped for for years to come. The revenue system was constantly changed, and always of the very worst. Over-zealous officers attempted to force the people to take the water. The consequence was for a time a violent prejudice against the use of it, and a state of popular discontent which led to the adoption of sweeping reforms and the introduction of proper system and suitable rates. This took place in 1872. The rates were then lowered to Re. 1 per acre in the case of leases executed before 1st May, *i.e.*, before any idea can be formed of what sort of a season the coming one is likely to be; and Rs. 1-8 for all leases executed after that date, *i.e.*, for water used chiefly for saving crops threatened with injury or destruction from drought. The new system was strictly adhered to, and administered with great firmness, and at the same time consideration, by the special revenue officers appointed, and the consequence has been that in the course of five years popular opinion has so entirely changed that not only has it been found practicable to raise the Rs. 1 rate to Rs. 1-8, but almost all the irrigable lands are now being leased for a term of five years at this rate.

None of our canals have reached the state in which any further extension of irrigation is unlikely, except perhaps the Midnapore Canal.

No difficulties are met with in Bengal in preparing land for irrigation for the first time. There is delay in the extension of village channels, but every inducement is held out to the people to make them as quickly as possible. In the Shahabad and Patna districts it is probable that, in the case of villages taking three-year leases, the village channels will be made by Government and paid for by the villagers by instalments.

BOMBAY.

BOMBAY.

Mr. Hughes.—The causes which have operated to retard the extensive use of canal water are explained in the Revenue Report attached to be the poverty, ignorance, and indebtedness of the cultivators, their extreme dislike of change in their long-established system of agriculture, the sparseness of the population, and finally the shortness of the supply during the hot season on some of our works. Another cause to which I have already alluded also, I believe, affects the extent to which the people irrigate the poorer crops. It is the fear that if they take the water the land irrigated will be permanently assessed at bagayet rates at the next revision of the settlement. In many cases the revision settlement falls due within a few years, and from the people's point of view the fear is a natural one. It takes a long time to eradicate such an idea, once formed. It is manifest that the assurance of the canal officer or even of the revenue officers on this point do not carry much weight, as the people are aware that they are not the officers who will re-classify their lands when the time comes.

The causes enumerated above exist on all our new canals. Any measure affecting the indebtedness of the people and tending to relieve them from their embarrassments, or placing a limit on the demands of the sowcar, would improve matters, and on works on which the supply during the hot season is unreliable the construction of storage reservoirs would remove one of the causes which prevent an extension of irrigation.

As regards the other causes, time alone can effectually cure them, and the improvement which has taken place during the last two years is a hopeful indication in this respect. The people have learned, at least to some extent, the benefit the canal is to them in a year of drought, and that by its means they can always ensure their crop, and it is beyond belief that they will not hereafter learn to apply the water to improving the out-turn of their crops, which would doubtless be effected even in years of good rainfall by judicious use of water.

3. None of our canals can be said to have reached the state in which any further extension is not likely, or is likely to be small. I ought perhaps to except the Rewari canal in Satara, an old work restored by Government which has been in operation some years, and on which the people show but little disposition to use any but the perennial water, which they fully utilise. Like the Krishna canal, this work is located in a district of favourable rainfall; and irrigation, except during unusual years, is not necessary for the ordinary crops; but in this case I believe that if the perennial supply were increased, there would be a proportionate increase in the area of other crops irrigated.

4. As regards the difficulty of preparing land for irrigation for the first time, inquiries on the subject, made recently, confirm the opinion that for a large proportion of the land under our new works very little indeed is required to fit the land for irrigation of ordinary rabi and kharif crops. Generally the erection of small bunds dividing the fields into small plots, and in some instances a little rough levelling with a species of sledge in common use for the purpose, is all that is required, and the expense is very trifling. In one instance a canal officer estimates that an expenditure of Rs. 5 to 10 per acre would suffice to bring one-fourth to one-sixth of the generality of land under command of new works into a fit state as regards levels and ploughing for permanent irrigation.

For perennial crops and the best sort of rice the expense is greater. In the case of experiments in rice cultivation made some years ago, the expense of preparing the land varied, on different canals, from Rs. 3 to 20½ per acre, the average being Rs. 14. This includes in some cases the cost of ploughing and transplanting, and was the actual cost to Government, and it may be assumed that the work was most thoroughly done. As a rule, the formation of watercourses is not a considerable item of expense, as in most cases the canal or branches constructed by Government bring the water within each village boundary, and minor branches constructed by the people cannot be very long nor can they involve any heavy work.

The difficulties in this respect no doubt to some extent retard the extension of irrigation, but they are being gradually overcome. On some of the works, owing to the sparseness of the population and the low rate of land assessment, the people undoubtedly find it pays them better to cultivate a large area without irrigation, which costs them but little trouble and from which they reap a light crop, in preference to resorting to irrigation for a restricted area, to which they have to devote a large proportionate amount of labour and care. See paras. 160 and 262 of the Revenue Report attached.

5. The Land Improvement Act (No. XXVI. of 1871), and the rules passed under section 18 thereof, provide fully for advances being made for the preparation of land for irrigation; but, as far as I am aware, no advantage has ever been taken of it on lands under command of our new works. Wherever the people allege the cost of the preparation of their fields as a reason for their not taking water for irrigation, they might be encouraged to apply for advances. I think that under Rule II. of the rules published at page 874 of the *Government Gazette* for 1873, the canal officer might be empowered to receive applications for advances and also to make the local inquiry necessary for advances under Rs. 5,000. I would make provi-

sion for a fixed annual sum for each work in the Irrigation Budget, and would debit the amounts to the capital accounts of the works, crediting the recoveries to the same head. I have no reason for supposing that even then the privilege would be extensively taken advantage of, but it seems to me desirable to simplify the process for obtaining small advances. The canal officer can always encourage a cultivator to apply for an advance, and it would be a great matter if he were empowered to aid in obtaining it under the Act and not be obliged to refer the applicant to another department, the officers of which might not be within immediate reach, and who might not take the same active interest in expediting a decision on the application. I would leave the power of granting a certificate for the advance in the hands of the collector, as at present.

6. As already stated, I think the shortness of the supply during the hot season does affect the progress of canal irrigation on some of our works. Irrigation is most profitable where crops can be grown in a regular rotation, the basis of which is the area of perennial irrigation. The most successful of our works are those where the perennial supply is most liable, and I think it certain that the total area of permanent irrigation will increase only in proportion to the area of perennial crops irrigated. By permanent irrigation I mean irrigation independent of the rainfall. During years of drought, of course, a larger proportion of inferior crops will be irrigated, but in the next favourable season a rotation of which perennial crops form the principal factor will be reverted to. The experience on old works in Khandesh as well as that on our new works suggests this opinion. On this subject I would invite attention to para. 163 of the Revenue Report attached. On the other hand, if the people could be brought to change their system of agriculture and resort to rice irrigation, a perennial supply would be of far less importance.

MADRAS.

Mr. Sullivan.—The causes are not far to seek. In the first place the Hindoo ryot is eminently conservative and slow to adopt any innovation, especially when he does not clearly see that it will benefit him to do so. There is no idea more general, or more fallacious, than the hypothesis that water has only to be brought to a hitherto unirrigated tract for all the people to scramble for it and at once to convert their dry grain lands into rice-fields. This may be, and often is, the case in a part of the country where the advantages of irrigation are generally known and the mode of rice cultivation is understood; but where this knowledge is wanting there are several reasons why the ryot should hesitate before quitting the path trodden by his ancestors for centuries. In the first place, capital is required to level and ridge the ground intended to be irrigated; then there is the question of enhanced assessment in the shape of water-rate which he will have to pay; again, the possibility, nay, the probability, of the land becoming barren for a time by saline efflorescence, has to be considered, as also in some cases the precariousness of the water-supply. All these considerations, apart from a perfectly natural prejudice against hastily adopting a new mode of agriculture which may or may not turn out profitably, serve to explain why the extension of irrigation should be slow in localities where previously cultivation has been carried on without the artificial application of water. Reference is made in the question to the Madras Irrigation Company's works at Kurnool. In 1866, when the writer was acting for a short time as collector of the district, all these causes operated against the canal water being utilised. There was first of all the fact that the ryots had always grown cholum (*Sorghum vulgare*) and other dry grains which formed the staple food of the country, the straw of which was considered far more nutritious for cattle than rice straw; there was precariousness of supply, inasmuch as the company could not guarantee water after the 31st December when they were under agreement to Government to close their head sluices so as not to injuriously affect the supply of the previously existing works in the Kistna delta; and in several localities, where the experiment of flooding had been tried, saline efflorescence had appeared, rendering for the time sterile land which before had been fertile, so that altogether the Kurnool ryot came to the conclusion that it was hardly worth while to pay an enhanced assessment of Rupees 4 per acre for benefits which were, to say the least, questionable. The year 1866, however, was one of drought and scarcity in those parts, and the ryots began to waver in their determination not to buy the precious fluid which was flowing idly by them. A little judicious management at this crisis might have weaned them from their prejudices, and have secured to the company a number of customers; but in spite of the deprecatory warnings of the Revenue officers of the district, who, for the sake of the ryots, and in the interests of the company (which, owing to the State guarantee, were identical with those of Government), were most anxious that some satisfactory arrangement should be arrived at, a shortsighted and rapacious policy was allowed to prevail, and this time of all others was chosen to raise the water-rate from Rupees 4 to Rupees 6 per acre.* Under such a mode of administration it would have been a matter for surprise if the extension of canal irrigation in Kurnool had been otherwise than slow. It is asked how these obstacles to progress can best be removed and the people induced to accept promptly the benefits afforded by artificial irrigation. When commercial enterprise desires to introduce a new article to the notice of the public every effort is made to conciliate them in its favour; it is widely advertised, samples are distributed, and possible customers are invited to satisfy themselves as to its merits. It is thought that much the same course might advantageously be adopted to enlist the sympathy of the agricultural community in new irrigation projects in localities where the benefits derived from the artificial application of water to the cultivation of the soil are not well understood. Let them have the water free or at a nominal rate for two or three years, and, having once realised its advantages, they would not care to forego its use when the time came for imposing an equitable charge. This would, to a great extent, obviate the necessity for advances to bring the land into condition for irrigation, and where needed the capital required could be obtained under the provisions of the Land Improvement Act, which are yet but imperfectly known and understood by the cultivating classes.

Lieut.-Colonel Mullins.—The extension of the use of canal water in this Presidency has not commonly been slow. The principal Government irrigation works are near the coast, and in the coast districts at any rate the people have shown a strong desire to take water, the demand being often much in advance of the supply.

The disinclination of the ryots to avail themselves of the water of the Madras Irrigation and Canal Company's canal has, however, been marked and disappointing. The absence of success is due to several causes, among which the chief are probably—

(1.) Prejudice of ryots against irrigation, to which they were not accustomed.

(2.) Difficulties resulting from inappropriate and complicate administrative arrangements, which made it almost impossible for the ryot to understand how he could get water, and what he would have to pay for it.

* *See* Appendix B.

Ch. IV. Qn. 23.

Madras.

(3.) Inefficient revenue arrangements.

(4.) The description of soil of much of the land commanded. The regur, regada, or black-cotton soil of the Kundar valley is in seasons of ordinary rain-fall highly productive when cultivated with dry crops, and cholum is the staple food of this part of the country and much appreciated by people and cattle. The people do not believe that irrigation would suit the soil, or that it would be possible to make canal water an even partial substitute for rain, and they were, and are still, averse to the conversion of their lands into paddy-fields. During the famine they were, to some extent, persuaded to try the effect of watering the dry crops, and some good crops were raised entirely in this way without any rain. This experience will doubtless lead to a more extended use of water when the rain-fall is scanty, but this year (1878) the rain-fall has been more than ample for the dry crops, and consequently but little, if any, canal water has been taken for such. It may be noticed that in the Kistna delta much very similar land is successfully and regularly irrigated.

(5.) The water-rate* for rice or paddy is higher than is usual under Government tanks in the neighbourhood of the canal. It is difficult to judge whether these charges have had any material effect in deterring the ryots from irrigating, seeing that they appear to have had very imperfect information as to what they had to pay, but it would have been a good plan probably had the full rate been reached by four instead of three increments.

There are no similarly circumstanced Government works of irrigation, but there are parts of the country in which there are tanks of native construction and of some magnitude, the cultivation of the fields under which with paddy the ryots look upon as of secondary importance to their dry crops, and these latter obtain the first attention. In the coast districts this preference is never shown, probably, generally, because the soil is better suited for irrigated than for dry crops.

Mr. Wilson.—I do not think that it can be said of the Kistna and Godavari systems that the extension of the use of the canal water has been slow. There is only one part of these tracts where I know water to have been steadily refused—part of the Tenaly division of the Repally taluk of the Kistna. Elsewhere water is sought with avidity, and the difficulty is to keep pace with the demands of the people. In the Kistna the scheme is not more than half complete, and the only obstacle to its extension and completion is the refusal of funds by the Government of India until the Capital and Revenue accounts have been furnished.

In the Godavari the greater part of the scheme has been completed.

Irrigation from the Godavari anicut began in 1847–8. Before that the recorded area of wet land in occupation was acres 81,503. In 1875–6 it was acres 525,398. Kistna anicut irrigation dates from 1855–6. The area of wet land in occupation is acres 59,675; in 1875–6 it was acres 264,256.

There are no difficulties in the conversion of dry land into wet that the most ordinary ryot does not feel himself quite superior to.

The existing system makes no provision for advances to cultivators for the adaptation of their land to irrigation; any system of advances for the purpose of cultivation can, in ordinary circumstances, be productive only of mischief; it destroys independence and thrift, and fosters a breed of pauper ryots.

A very large supply of water for irrigation in the hot season is not expected anywhere. In the Kistna there is none at all; the canals are then all closed for clearance.

The hot season in India is like the winter in England,—the time that the land hath rest. Shortness of supply at that time of year can have no effect whatever on the progress of canal irrigation.

Mr. Foster.—In this district the extension of the use of canal-water has not been slow. There are no obstacles to it here, nor are any of the canals in an unsatisfactory condition as far as their utility is concerned. In regard to the works of the Madras Irrigation Company, the extension of the use of canal-water has been slow. That canal has been taken through country in which, up to then, irrigation was almost unknown; the nature of the soil generally, in the opinion of the ryots at least, was not such as would allow wet crops to take the place of dry. Again, the lower subordinates of the company would often conduct themselves towards the village authorities as their superiors, and the village authorities, on that, would not allow any of their villagers to take the water. As I have said before, the villagers will not listen to any one who comes in the name of a department or a company, with the single exception of the Revenue Department, unless he can force them to listen by his own personal influence. The subordinates of the company have failed to exert this influence.

No difficulties need be met with in preparing land for irrigation for the first time. All fields can be subdivided by the ryots. They only have to put up boundary marks, and to apply for the subdivision, and it is done. Practically, there is no limit to the subdivision which they can have. Also, if there is sufficient water in the canals, it will be given at half rates to people who are wanting to prepare their land for irrigation for the first time. There is certainly here no necessity for making advances to cultivators to adapt their land for irrigation. The expense and trouble of thus preparing the land must be very small in cases where, as in the Godavari delta, the soil is better adapted for wet than dry crops. The shortness of supply during the hot season has not affected the progress of canal irrigation.

* 3 Rupees first year.
4 „ second year.
5 „ third year.
6 „ fourth and afterwards.

Ch. IV. Qn. 24.

Question 24.—Mode of meeting Charges on Unremunerative but Necessary Works.

Where the financial prospects of projected irrigation works are not such as to appear to justify the outlay of public money on them in expectation of the income being at an early date sufficient to cover all the expenses, including the charge of interest on capital outlay, do you think that a special rate to make good the deficiency might properly be charged on the district for the benefit of which the works are designed, or on the land that would be protected, and if so, under what conditions? If not, what are your objections? How would you meet the case put in this question, if not by some such special rate? Is it more equitable to place a compulsory charge on other districts which can probably derive no advantage from the works, or only on the districts or lands that can benefit? If the protection to be given by such works to particular districts is deemed of great importance under conditions such as have been above stated, what course do you think should be taken, having regard to the necessity for protecting the general finances of the country?

PUNJAB.

Captain J. W. Ottley.—The conditions of the financial success of canal projects in various parts of India are so essentially different, and so many different cases would occur in practice, that it seems impossible to give to the points raised in the above questions a specific reply which should be equally applicable to all the cases which might arise in practice.

For instance, there is first the tract of country which is ordinarily not in want of irrigation, and where there is little or no hope of canal works ever proving remunerative, but where it is considered that a canal should be made as an insurance against famine. Here perhaps it might be right to impose a compulsory protection rate, much on the same grounds as embankment rates have already been imposed in some parts of India. It would, however, appear open to question whether, even in these cases, it would not be preferable to afford the required protection by the improvement of communications, whether by rail or road, rather than by canals. It may, however, be at once said that this case does not apply to the Punjab, because in those parts of this province through which canals are likely to be projected the country is so dry that extensive cultivation without the aid of irrigation is ordinarily impossible, and, as a matter of fact, canal water is eagerly taken up wherever the rates are fixed sufficiently low to admit of the cultivators making a fair profit by its use. Here the only question for consideration is whether the capital cost of the project is such that the interest on it, together with the working expenses, can be met from such rates as experience has shown that the people are able and willing to pay. It is considered that if, owing to engineering difficulties or other causes, the capital cost cannot be reduced within the required limits, it will generally be better to dismiss the scheme as impracticable, rather than to impose a compulsory rate on an unwilling population. Indeed, it may be laid down as a general rule that in this province no canal project should be entertained unless reasonable grounds exist for believing that it will prove remunerative, or, at any rate, self-supporting, within, say, 10 or 15 years after the completion of the works.

As regards the Punjab also, it may be said with confidence that generally it would be neither desirable nor expedient to impose a compulsory rate on the lands through which projected canals would have to pass, because these tracts are as a rule, previous to the introduction of canal irrigation, so sparsely populated and so poor that they would ordinarily be quite unable to bear such an additional burden as is suggested in the above questions, and the attempt to impose such a rate under these circumstances would make the administration of government most unpopular.

But besides all this, it can be shown that a compulsory rate may be, at any rate in some instances, positively harmful. A case in point is the present condition of some tracts of country watered by the Western Jumna Canal. Here an enhanced land revenue was assessed at the last settlement on certain areas deemed by the settlement officer capable of being watered from the canal. This rate was levied whether the lands received water or not, and was in fact a "compulsory rate," pure and simple. The result has been that the people have continued to take canal water long after it was desirable that it should have been withheld on account of the rising of the springs and the general water-logging of the country; the canal officers have been powerless in the matter, *because*, owing to the compulsory rate, the cultivators had a right to the water.

Had it not been for this compulsory rate, the water in these parts could have been largely restricted, and passed into other drier tracts where it was really urgently required; and thus a double benefit would have been ensured.

It has been said above that as a general rule canal projects should not be entertained unless they are likely to prove remunerative, but even in this case the question still remains as to how the interest is to be defrayed during construction, and up to the time when the works shall be self-supporting.

It has also been pointed out that it would ordinarily be impossible to meet this interest in the Punjab from compulsory rates imposed for that purpose on the lands to be watered; but it may be desirable to inquire whether—first, the district, and secondly, the province, could not afford the necessary assistance, for it must be remembered that the mere construction of any great public work necessarily adds to the wealth of the district in which it is being carried out, by the expenditure within its bounds of a large sum of money, and moreover that, in such a dry country as is presupposed, the additional cultivation rendered possible after the completion of a canal must also increase the general wealth and prosperity not only of the actual irrigators themselves, but also of the district as well as of the province in which they are resident.

The condition of the various tracts, and the circumstances of the canals which might be projected to pass through them, are, however, so various, that it would appear impossible to lay down any general rules for the treatment of all cases alike, and it is believed that Government would have to deal with each one separately after a full consideration of all the facts involved.

It might in some cases perhaps be possible to meet the charges from the surplus revenues of the district, in others it might be necessary to transfer the burden to the province, or even to the general resources of the empire, and the decision would to a great extent be determined by the magnitude and importance of the particular work.

At first sight, the proposition to impose the whole or any portion of the charge for a canal project in the Punjab on the general resources of the empire may appear to be inequitable; but it is believed that a slight consideration of the actual facts will show that this is not the case.

The figures about to be given will be found at pages 13 and 14 of the statements of accounts prepared by the Examiner, Public Works Accounts, up to the end of the official year 1877–78. They are published in the Revenue Report of this Department for that year, and immediately follow the Chief Engineer's Review.

From these figures it will be seen that the total capital of all kinds expended on all the irrigation works of the Punjab amounted on the 1st April 1878 to Rs. 3,96,91,858; of this sum Rs. 60,88,524 were due to contributions from native states, and we are not therefore immediately concerned with these amounts. Of the remainder (Rs. 3,36,03,334) Rs. 1,64,48,438 were obtained from *ordinary* funds, that is to say, were derived from the ordinary revenue of the empire from year to year, and the balance (Rs. 1,71,54,896) was obtained from *extraordinary* funds, that is to say, from money which had been borrowed and on which therefore interest is clearly due.

Now the *net revenue* of all the canals, as given in the statement referred to has amounted altogether to Rs. 3,83,02,397. This includes the net direct income (Rs. 1,14,08,743) and the so-called indirect income (Rs. 2,68,93,654). This latter is also included, because it is, as a matter of fact, as much the income of the canals as that which is derived from the actual water-rates, for this income would not have been levied by Government had it not been for the canals.

Now the *net* income of the Punjab canals having been up to the end of 1877–78 Rs. 3,83,02,397, let us deduct from this the *whole* of the ordinary expenditure, *viz.*, Rs. 1,64,48,438, and from the remainder, *viz.*, Rs. 2,18,53,959, let us again deduct the whole of the interest charges on extraordinary expenditure, *viz.*, Rs. 32,05,689, and the balance, Rs. 1,86,48,270, will clearly be the gain which has accrued to the Imperial treasury from the operation of the Punjab canals.

Ch. IV. Qn. 21.

Punjab

Under these circumstances it scarcely seems unreasonable to suggest that, until the account is balanced, the Imperial Government should be asked to defray the interest charges on new canals rather than that additional taxation should be imposed on a province which has already so largely recruited the Imperial resources.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Board of Revenue.—The Board deprecate strongly the imposition of a special rate on account of prospective advantages, a rate which could not be met from the profits of irrigation. No cultivator would appreciate the propriety of Government taxing him because the land he occupied would be protected from drought at some future time, and that by a canal which was not giving, and was not likely to give him for some years, any water for the irrigation of his land. The outlay is largest at a time when the canal is unable to give out any water. The imposition of a special rate in these provinces would be all the more severely felt in the North-Western Provinces, where the canals are not opened out by degrees, as they are in the Madras Presidency, but are nearly completed before any water is thrown into them. (See Roorkee Treatise on Civil Engineering, vol. II., page 404.) If the canal runs through a tract in want of canal-irrigation, and is constructed with due regard to economy, the original outlay will eventually be repaid and adequate interest also secured from the sale of the water (in other words from the occupier's rate). A canal ought to be a remunerative work, both directly in its returns of income, and indirectly in the form of insurance of the Government demand. The Government benefit very largely in a dry year, even where the income only just covers the cost of construction and maintenance, for the supply of water for which they receive payment serves to bring in a considerable amount of land revenue which would otherwise be lost. The Board are opposed to the suggested special rate, whether it be leviable on the land irrigable from the canal, or on the district or districts which the canal will benefit, or on those "which can probably derive no advantage from the works." The Board would observe that it can hardly be said of any district in the provinces that it would probably derive no benefit from the canal, inasmuch as canals keep up the food supply, especially in a year of drought, and though a distant district may not benefit directly, it must benefit indirectly to the extent that the canal, by supplying certain districts with grain, prevents these last districts from draining distant markets.

Mr. Anderson.—(1.) Certainly not. If canals do not pay it is due to their having been constructed when they were not wanted, or to errors in engineering particulars, such as supply available, cost of works, &c.

(2.) North-West experience shows that when the supply is steady the demand is so too, and that the people are ready to pay for the water a sum that, if the works are properly constructed, will cover interest charges.

(3.) If the cause of financial failure would be due to expensive nature of works, the canals should not be constructed.

(4.) The district likely to be benefited is too small a unit; the province is more expedient, and in most cases more equitable. Orissa has helped to pay the interest charge of the East Indian Railway in its earlier years, without getting any benefit from the works; why then should not the districts in the Gangetic valley of Bengal pay for the interest of the Mahanadi canals?

(5.) Make the works from surplus income

The subject should be dealt with on a broad basis.

If it is the duty of the State to provide against famine, and none can doubt this, is it needful to discuss the source from which funds for the purpose are to be obtained? If the affected districts are only to pay, the result may be constant artificial famine. Again, if the charges are distributed over the empire, they will be less felt than when laid on a few districts. Lastly, where is the line limiting the liability to end? It would be as reasonable to ask Orissa to pay for its canals as to ask the Panjab to pay for the Scinde-Panjab Railway, or for the barracks of the European force contained in it.

Colonel Brownlow.—In localities where a Government irrigation work would periodically protect a district from famine, although the constant demand for water would not be such as to warrant expectations of the income covering interest and maintenance charges at a reasonably early date, I think that a protection rate might fairly be charged on all lands protected by the work. I would define protection by capability to irrigate during time of drought one-third, or as a minimum one-fourth, of the area charged with a protection rate. I think that any indirect protection from famine afforded by the proximity of an irrigation work to districts not actually irrigated should be regarded as a lessening of the burthen of future expenditure on famine relief, and as such reckoned an advantage to the general finances of the country, but not one for which a protection rate ought to be levied. And in assessing the rate strict regard should be had to the benefit conferred on the land, *not to the cost of the work.* In proposals for levying a protective rate that have come before me, the necessity for making good the deficiency of income from the interest and maintenance charges appeared to be the sole guide in fixing the amount of rate.

Bengal.

BENGAL.

Colonel Haig.—The question is, where the direct returns from projected irrigation works are not likely to be such as to cover the charges for interest and maintenance, is there any objection to a special rate being charged on the district benefited by the works to make good the deficiency? This question has reference to "projected" irrigation works Assuming that a projected irrigation scheme is simply a *necessity* for the district for whose benefit it is intended (and under no other circumstances probably will any such scheme be carried out in future), I see no objection to the levy of such a rate as may be necessary to make up the difference between the charges for interest and working expenses and the receipts from irrigation and navigation. But it may be a question whether the rate should be levied only on the "district" within which the works lie. I should rather think it more properly leviable on a larger area, as the indirect benefits from the works, in the shape of protection from famine, will certainly extend over a much larger tract of country than that actually irrigated by the canals. If the works be carefully planned to deliver no more water than there is reason to believe there will be a demand for, and *low* rates be charged, irrigation will be universal to the extent practicable, and the balance of charges to be covered by special taxation so small that, if spread over a large area, it will be little felt The difficulty of assessing such a rate would be found only in the case of isolated schemes, because it may be impossible in such cases to draw a line at the point where the benefits from the scheme cease to be felt. But taking a whole

province such as Bengal, and supposing a general scheme of public works (not necessarily involving any excessive expenditure) to be drawn out, by which every part of the province will in some way or another benefit, then a general rate, such as the present Public Works Cess, seems to me an admirable and most equitable mode of providing for a portion of the annual charges which such expenditure must entail; and I believe that, if the works are judiciously planned, a low rate which will be little felt will not merely cover any deficit, but leave a considerable surplus available for other public improvements. I believe that the results so far of this system in Bengal point directly to this conclusion. Especially in the case of works of communication, as canals and railways, is this principle of importance. A charge upon the goods carried is the worst possible form for the country in which the necessary provision for interest and working expenses can be made. It is right, of course, that the goods and passengers carried should bear a large, perhaps the larger, part of the cost; but the more that can be thrown upon the country generally, the lower will be the cost of carriage and the greater the value of the communication. If the rates on the East Indian Railway could be reduced by any such method one-half, the value of the railway to the country would be quadrupled.

As a general rule, irrespective of any special necessity such as may arise in particular cases like that assumed in the question under reply, I would say I am decidedly in favour of a part at least of the charges for all public works, such as canals and railroads, being defrayed by special compulsory taxation distributed over the widest possible area, such as the present Public Works Cess, which fully covers all charges for interest on works hitherto constructed and also supplies a margin for fresh works.

With regard, however, to the difficulty about schemes which, if carried out in the ordinary way from local funds, might not return sufficient to cover the charge for interest, it may be well to point out that in Bengal the co-operation of the zemindars is now being enlisted in local schemes for which they are willing to guarantee the interest on a part of the cost, the balance being defrayed by a grant from provincial funds. By this system of grants-in-aid it is probable that much may be done for the extension of irrigation in districts from which it would be excluded, if the works could only be carried out under the operation of the rules applicable to extraordinary works.

BOMBAY.

Colonel Anderson.—I do not think that a special rate applied on a limited protected area would be successful at first. It would not be successful, because, unless the rate were a heavy one, it would be unproductive in amount, and if a heavy one it would produce the most intense dissatisfaction.

It would not, in my opinion, be just, because it would be absolutely out of the power of many cultivators at once or at any early time to make use of the water. Some might want means to buy the additional cattle required for cultivation, some might hold undulating land costing much to prepare; therefore the compulsory rate would hit them very unequally compared with those holding comparatively level land. In fact, a dozen differences of circumstances may be imagined for different individuals which would render the incidence of a sensible compulsory rate most unequal.

I would meet the case by a general rate of insignificant and imperceptible incidence, the total produce of which would amount to a very considerable sum, much above what could be provided by local compulsory rates of considerable weight. I estimate that an additional famine insurance cess of six pies per rupee of assessment would, in the Bombay Presidency, excluding Sind, give about $10\frac{1}{8}$ lakhs a year; such a tax would be almost imperceptible in its incidence, and would be immediately productive. This cess should be of course leviable on all lands and villages, whether inam or Government.

The produce of this tax I would devote to a fund for first construction and providing interest of the capital expended till a work began to pay itself. Moreover, I would not limit the expenditure of the proceeds of this tax to works of irrigation, but would expend it on all works offering a fair probability of proving remunerative to the extent of 4 per cent., or even 3 per cent., in the case of irrigation works, which would generally be obviative of famine, under which category I would include railways quite as much or even more than irrigation works. As soon as any work originally started on this fund paid over 4 per cent., at least half the surplus receipts should go to credit of the fund.

Mr. Erskine.—I do not believe that many of the irrigation works on a large scale can ever pay the charge of interest on capital outlay; but, in my opinion, the real remedy would be to discontinue constructing these large and costly works except where a large perennial supply of water could be assured, and to be content with smaller ones and with the encouragement on a large scale of the construction of wells for irrigation purposes.

It has always seemed to me that far too little has been done in the matter of constructing wells. I believe no works would pay Government so well, and the outlay would be so soon repaid that the enormous sums required for the large irrigation works would never be required, and the money might instead be devoted to railways. I do not of course advocate wells as a panacea for all evils; there are parts of the country where the water-bearing stratum is so deep that the water is practically useless for irrigation purposes; there are other parts where wells rapidly turn brackish; but there are also large areas where wells could be sunk almost anywhere and water be found, and the water so found remains ready for irrigation purposes when the running streams and small rivers are dry. In many parts of the country wells scarcely need to be built up; but taking all parts together, if we allow Rupees 300, or even 400, as the cost of constructing each well, then for Rs. 5,00,000, which would not go far in an irrigation scheme, 1,250 wells could be built, which, if we assume that each waters four acres, and that Rs. 5 per acre is charged, allows 6 per cent. on outlay, or, if Government desired that the cultivators should own the wells and repay the capital with interest, then I am certain that in many parts of the country the cultivators would be ready to take up any number of wells constructed in their fields and to repay the cost with interest within a very limited time. Wells diffuse the benefits of irrigation in a way canals cannot do. Every village may have its wells, whereas but a few can be within the range of canal water. Besides this, the well-to-do cultivators would be those who would wish for wells, men who would be prepared to pay for them, and thus return at once the capital to Government to be expended over and over again.

I do not for a moment wish it to be supposed that I am opposed to irrigation works on a large scale; such is not the case; but the question, "Will it pay?" should be asked in the case of each; and when the answer is unfavourable, then I would condemn the project and resort to wells, not leaving it to the cultivators entirely to build their own, as has hitherto been done, but, by offering to build them for them

CH. IV. QN 24.

BOMBAY.

(or with assistance from them) on favourable terms, strive to increase the number of wells as much as possible. Large works in a country like the Deccan rarely pay. Wells, I believe, would pay quickly, and hence my desire to see their construction promoted. I am aware that the cost of irrigating land from a well is very much greater than the cost of irrigating from a canal; indeed, in many parts the cost of irrigation from wells is said to be as high as Rs. 30 per acre, and yet it pays. This is undoubtedly strange at first sight when we consider the difficulty that has been experienced in getting water from canals utilised, but it must be remembered that from a good well perennial irrigation can be secured, and this is what is really liked, and wherever perennial irrigation can be secured from canals there too I have little doubt that the water will soon be eagerly sought for.

Let there be large irrigation works by all means where they will pay; but instead of burdening the finances of the country with the cost of many unremunerative works of this class, I should prefer to see only a few well-selected ones carried out, and railways constructed as a protection against famine, in preference to increasing the number of irrigation works that do not pay. A railway always increases the value of property in its neighbourhood and stimulates production, and if canals followed railways instead of preceding them there would be a much better chance of the latter proving remunerative.

I may mention that before the introduction of the present survey system, if a cultivator wished to construct a well, he made an application to the collector, who granted him permission, and at the same time a guarantee that no extra assessment would be levied for a fixed time (often as long as 30 years). At the expiry of this period a water-rate was imposed. Since the introduction of the revised settlement nothing has been charged on newly constructed wells.

Mr. Hughes.—1, 2. On the grounds that—

(1.) Irrigation works are essential to the general prosperity of the country, which without them is exposed to constant vicissitudes from capricious rainfall.

(2.) Facilities for works exist only in certain favoured localities, and that to ensure any appreciable protection to the country generally it is necessary that all facilities where they exist should be turned to account irrespective of whether the people on the land affected are desirous of irrigation or not.

(3.) That the construction of such works benefits the country generally, and in a more direct and proportionately greater degree the people who hold the land under the immediate protection of the works.

I think that both a light general rate on the whole district and a proportionately higher rate on the lands which directly benefit are justifiable. But in the latter case I would levy the rate only on the land for which water is available, and I would exempt such land as is actually irrigated and for which water-rate is paid.

3. Were it possible to meet the general want of the protection afforded by irrigation works by constructing them only where the people expressed themselves as desirous of irrigating and paying for it, there would of course be no justification for levying any charge other than that for the actual use of the water on works constructed elsewhere. But this is not the case.

In the words of a recent report by a survey officer of great experience:—

"Should it happen, contrary to all economic law, that the ryots refuse to be enriched by resources placed at their disposal, and thereby render great schemes unprofitable, and as they are likely to be thrown on Imperial charity in seasons of drought like what India has recently passed through because of the absence of such works, which cannot possibly be provided for at a moment's notice, they should be compelled by the legislature to pay a moderate insurance rate, say 2 per cent. on the capital expended, even if they do not take the water provided; the insurance to be rateable on all the land commanded, and remitted in each case of demand for water at canal rates. This benevolent compulsion will, I am convinced, in due course of time, be admitted as one of the greatest boons ever conferred on an agricultural community *incapable* of helping itself."

Mr. Propert.—I cannot imagine a case in which the holders of land in no way under the influence of a canal could be equitably made to pay extra rates simply because a canal exists in the district in which they happen to reside. A special rate might be charged upon land *really* protected by an irrigation project, but such protection should be fairly *proved by facts*, and not merely *estimated upon paper*. My objections to the first proposal are framed upon the glaring injustice of such a measure. If it be clearly ascertained that irrigation projects are not likely to yield any return whatever, I do not consider that they should be sanctioned at all by Government. Under the most favourable circumstances, irrigation cannot be considered anything more than a mere attempt to supplement the natural rainfall; and considering that drought, if at all general, cripples severely the resources of the irrigation works themselves, I should be very sorry to see large sums of money expended on these projects, the real value of which is, I fear, too frequently overestimated by the sanguine author of the scheme. Each irrigation work should, I think, stand or fall on its own merits entirely; it would be most impolitic to impose a permanent heavy tax upon land in general for the support of a few schemes which, except under special circumstances, are likely to suffer in seasons of insufficient rainfall. In the above remarks I do not, of course, allude to tanks and canals constructed, under emergent circumstances, as famine-relief works; it may be often necessary to construct such a work in order to keep the people of the district from starvation, and may subsequently be considered desirable to complete the project, and thus protect a tract of arable country, although the prospects of revenue may be to a great extent hazy.

MADRAS.

MADRAS.

Mr. Sullivan.—That it would be more equitable to recoup public outlay on unremunerative works by imposing a special local rate instead of distributing the cost over the general revenues of the country may to a certain extent, be admitted; but it is difficult to understand under what circumstances it would be justifiable on the part of the State deliberately to undertake such projects. Allusion is made in the question to their being constructed for the "protection" of the locality, presumably, in the time of scarcity; but if burdensome taxation for ever is to be the point of such protection, the remedy is likely to prove worse than the disease, and progress would be obstructed, and the continued strain on the resources of the people would leave them less capable than ever of standing up against the pressure when the time of that came round. And if the principle be admitted that it is expedient to provide irrigation *at any cost* for the protection of a province in time of drought, where is the line to be drawn? Impossible is a word not to be found in the engineer's vocabulary, and so long as funds are forthcoming a head of water may be secured in almost any locality. It seems to be a dubious policy to depart from the old rule that no projects should be undertaken save those which might reasonably be expected to pay their cost of

maintenance and the interest on capital outlay without undue pressure on the resources of the people. When to cover expenses it becomes necessary to impose a cess exceeding the average rates of the district, such pressure is applied, and the project should be abandoned on general administrative grounds and for the reasons given below.

Lieut.-Colonel Mullins.—Compulsory special rate on all Lands protected by an Irrigation Work.—There can be no injustice in making particular districts or localities pay for protection which may be afforded them by means of irrigation works. The arrangement should be precisely similar to taxation for police or other protection. What should be the unit of territory would depend upon circumstances. The rate should be very light, and should be spread over as large an area as possible. All land commanded by the canals or reservoirs should be required to pay and land not so commanded, but within reach of the indirect benefits such as certainty of food-grains being in the country, better fodder, cheaper fire-wood, might contribute something in the shape of a still smaller rate. Lands actually irrigated would, of course, pay a fair and full rate. Nothing could be easier than to provide for such a system on the resettlement of a district, but it would not be desirable to levy a cess for any such purpose. Numerous cesses are very distasteful to natives, and natives are not singular in their dislike to imposts which are added from time to time, and which are all imposed on the same thing, viz., the land. If the land could bear the existing assessment *plus* the several cesses which have been added thereto, it should have been assessed at the higher figure once for all, and then the objects to be provided for by the cesses should have been met from the revenue. To settle the land-revenue and then to upset the settlement at short intervals by fresh impositions is, however good the objects arrived at, regarded by the natives as a breach of faith.

A district like Bellary would be greatly and prominently benefited could water be provided for it on any large scale, for it has unhappily frequently suffered from drought. All that would be desirable cannot be done, for the district has no really good river within its boundaries, but it has a good river, the Tungabhadra, for its northern boundary, and so far only an insignificant strip of country along the river margin has derived any benefit from this fact.

A practicable scheme* has been worked out for a canal by the Madras Irrigation and Canal Company, and has been abandoned by them to Government, because they were unable to raise the necessary capital. It is not financially a very promising project, but the loss on interest would probably not be very considerable, and a small rate on the protected area of about 800 square miles would make it financially feasible. Were any considerable part of the northern portion of the district well watered, such a scheme might not be entitled to favourable consideration, but there is no part so circumstanced, and there is no other means of ameliorating the condition of even this fraction of the district. What can be done elsewhere is not exhaustively known, but the circumstances are not favourable, and it is improbable that any very material alteration of the conditions of agriculture can be secured, for rain-fall is liable to be very deficient over the entire basins of all the interior rivers.

The losses of the last twelve years, could they have been prevented even in the area of 800 square miles above alluded to, would have more than sufficed to cover a protective rate, and undoubtedly the people would have been in a much happier position than is the case at present.

Mr. Turner.—I believe irrigation works will always pay in this country if carefully projected and constructed, and I believe the ryots will always take the water and pay for it if it is to their advantage to do so. I believe it would produce the greatest discontent throughout a district if you imposed a tax upon that district to bolster up a work which had turned out a failure, even though it may have been started for the benefit of that district. Nor can I see how you can tax the land which would be protected. It is not sufficient to bring water to a man's door, and say to him "use it; if you don't use it, you must pay for "having it there, as it is an assurance against future "drought and famine." I think if you imposed a tax of this sort you would produce grave discontent. But it would, I think, be unnecessary to impose such a tax, because I am certain the ryot would use the water, if it was made worth his while. Take again the instance of the Madras Irrigation Canal; the rate for water under that canal used to be, I think, Rupees 6 per acre. No one, I presume, would inflict a tax on land which "would be protected" of Rupees 6 per acre. No permanent tax exceeding Rupee 1 or 2 per acre could, I suppose, be imposed. I think the ryots would gladly take water at this rate for their dry crops, and no tax would be required.

Mr. Wilkinson.—I think that a special rate might in such a case be charged on the land which would be benefited by the projected irrigation work over and above the regular wet assessment; that such special rate should commence at a low per-centage charge over the annual wet assessment, rising gradually until it reaches, say, 10 or 20 per cent., and then as gradually decreasing. Thus a holder of wet land under the Marandahalli project in Dharmapuri paying Rupees 50 per annum should be required to pay in the first year 2 per cent. over and above the Rupees 50, in the second year 4 per cent., in the third year 6 per cent., in the fourth year 8 per cent., in the fifth year 10 per cent., in the sixth year 8 per cent., and so on. The amount of per-centage payable by each ryot would depend on the sum necessary to cover expenses and the number of years within which the State expected such expenses to be covered. To charge a ryot 10 per cent. at once, before he has, in all probability, realised the benefit of the improvement effected in the water-supply, would, in my opinion, merely cause him to throw up his land. It seems to me that it would only be equitable to make an additional and special charge on the area protected, not on the district.

* Upper Bellary project.

QUESTION 25.—EXISTENCE OF CUSTOMARY CLAIMS TO USE OF WATER.

Have any customary claims or prescriptive rights in the use of water from tanks or canals or water-courses grown up in your district? What is their nature and history? Have they led to inconvenience in respect to the general utility of such works to the agricultural community that might benefit by them? Would it, in any case that you know, be desirable to buy out such rights as exist, and to prevent the accretion of others? Have such claims or rights to the use of the water in the upper parts of rivers obstructed the application of the water in the lower parts to purposes of irrigation, or vice versâ? *If this has happened in any case, could any remedy be applied which would be equitable? How should disputes on such points be settled? In cases in which the action of the ordinary courts would be impossible or inapplicable, what principles should govern decisions in such disputes?*

Captain Ottley.—On the Bari Doab canal no prescriptive rights in the use of water have arisen, but in some cases prescriptive rights in the water-courses constructed by certain individuals in the early days of the canals have given rise to a certain amount of inconvenience, because, although the water pertained to Government, the channel in which it was carried from the distributaries to the villages belonged to the individual who had originally the enterprise to make it, and he consequently charged a further rate on all lands irrigated. These channels, however, have for the most part been bought up by the cultivators concerned, or else by Government, and it is believed that few, if any, such rights now exist, and they will certainly not be permitted to grow up in the future.

On the Western Jumna canal a few prescriptive rights exist, but are not of a very embarrassing nature. They may be divided into the five following classes:—

(1.) *Right to water in the head villages.*—When this canal was first opened in 1821 there was considerable difficulty in procuring labour for the construction of the head bunds which had to be made annually to divert the water from the river into the canal. Inducements were therefore held out to settlers, and arrangements were made with the villages whereby they were to supply so much labour on the condition of receiving irrigation for their lands rent-free. At the present day, however, the value of the water supplied is from 10 to 20 times the value of the labour given. This arrangement must, under the terms of settlement and the orders of Government, be maintained during the currency of the present settlement, which will, however, expire in the course of a few years.

Shares in village water-courses.—Formerly on the Western Jumna canal there were no Government distributaries, the village water-courses being constructed direct from the main canal at the cost of the cultivators, and, in so far as a canal without distributaries is useless, the villages were in one sense co-partners with Government in the canal, and had, therefore, to a certain extent, a right to the water carried by these channels. These old water-courses are, however, being gradually replaced by properly aligned distributaries made at the sole cost of Government.

(3.) *Private water-courses.*—There are a few private and zamindari water-courses which stand on much the same basis as those belonging to villages, and which also are gradually being replaced by Government distributaries.

(4.) *Enhanced land revenue a claim to water.*—At the old settlement an extra rate was levied on certain areas assessed by the settlement officer as capable of irrigation from the canal. This extra rate was called the "enhanced land revenue," and was collected whether the occupiers chose to water their lands or not. This extra rate amounted annually to Rs. 3,85,925, and was nothing more or less than a compulsory water-rate. So long as this rate was levied it is clear that water had also to be given, and in this sense the irrigators had a prescriptive right to the water. Under the new settlement, however, which is now in progress, this enhanced land revenue will cease absolutely, and in its place will be imposed the owner's rate, which will be assessed by the canal officers crop by crop on those lands only which have been actually irrigated during that particular season. This alteration will be most beneficial in every respect,—it will not compel any set of men to irrigate against their will, whilst it will enable the canal officers to deliver any water so released to those drier tracts where it is infinitely more required.

(6.) *Jhind and Kalsia claims.*—The fact of the canal passing through Jhind territory has been held to give that state a claim to water, which has recently been fixed by the local government at 200 cubic feet per second. A similar claim also exists on behalf of the Kalsia state, but the actual quantity to which it is entitled has not yet been definitely settled.

On some of the small inundation canals which were originally constructed by private agency, claims exist which are occasionally somewhat troublesome; some have already been bought out, and others are now under consideration, and will, it is hoped, be finally settled before long.

As a general rule, it may be said that no serious difficulty has been encountered in dealing with most of these claims, although in some cases the discussion of the terms which should be alike equitable to Government and to the claimants has been somewhat protracted.

No case is known in the Punjab of the application of the water in the lower parts of rivers to purposes of irrigation being obstructed by claims or rights to the use of the water in the upper parts, or *vice versâ*, and if any such exists the inconvenience is so slight that it has not as yet been felt. It is believed that most rights can be bought out, not necessarily by paying down money, but perhaps by permanent remission of demands commensurate with the injury entailed, or by a reconsideration of the terms of settlement. Disputes on such points would ordinarily be settled by order of the local or Supreme Government, according to the magnitude of the question involved.

Mr. O'Brien.—The right of the irrigators to take water from all the canals in the district is prescriptive. Both the State and the persons through whose lands the canals pass own the canal beds, but the rights of the State and of the landowners have become so intermingled that it cannot be said that the ownership rests with either the one or the other alone.

Three-fourths of the canals were excavated and maintained by the irrigators. The remaining fourth consists of those canals which were dug under the Government of the Nawab of Bahawalpur. In this case one-fourth of the expense of first excavation was borne by the Nawab's government, and three-fourths by the irrigators. The maintenance of all the canals has been entirely borne by the irrigators; all that Government has contributed is the power of contribution to effect the clearance, and a certain amount of supervision. It is because the irrigators have for the most part excavated and entirely maintained the canals that I say the right to take water is prescriptive. The prescriptive rights of the irrigators have not led to inconvenience in respect of the general utility of the canals. There is never any difficulty in a landowner, not an original irrigator, getting water for land within reach of the canal which has hitherto been unirrigated. I have never heard of objections being made to the extension of canal irrigation to new land. I do not think it desirable or possible to buy out the prescriptive rights. The original excavators or irrigators do not form a definite body. It would be impossible after so many changes to say who the persons were who had the prescriptive rights, though there is no doubt that those rights exist. Extension of canal irrigation in this district is so easy that the right to irrigate is rendered less valuable. It has been thought necessary in the neighbouring district of Dera Ghazi Khan to buy up the prescriptive rights of the original excavators. The canals were dug there under similar circumstances to those in this district. No claims grounded on prescriptive right have been made. The irrigators on any canal are all on the same footing in

this matter. I have never heard of any irrigator urging superior claim to water on the ground that he had been an original excavator or an irrigator of long standing. No suits regarding canals or canal water have come before me since I have been in the district.

Mr. J. B. Lyall.—The inundation canals of this part of the Punjab were almost all constructed in the first instance by the free or forced gratuitous labour of the people through whose lands they were made, or of people to whom land was granted on the canal in lieu of such labour. The Government of the day, as a rule, only assisted by organising the enterprise; sometimes it also helped with hired labour or by distributions of food.

And after construction the canals have been maintained by the gratuitous labour of the irrigators, who have also had in many cases to dig very long kassis or water-courses to bring the water from the main canal to their lands.

Broadly speaking, all the irrigators may be held to have acquired prescriptive rights to water from these canals. I think Government would have to pay compensation in addition to remitting revenue if it diverted water from a man's land, not of necessity, but in order to improve or extend the canal.

In this respect the provisions of the Canal Act do not seem to sufficiently secure the rights of irrigators on these canals.

Certain persons claim the right to put up chaps or dams in these canals, so as to raise the water till it will flow on to their lands. The erection of such dams has been generally forbidden, as it much reduces the supply of water in the canal beyond the dam; it is sometimes still allowed under certain restrictions where the claim is of old standing and the land cannot get a flow of canal water in any other way.

The kassis or water-courses on these canals are considered the property of the persons who excavated them; other persons sometimes buy a share in them, or take water from them and pay for it. They can, of course, apply to be allowed to construct a separate water-course for themselves, and the Canal Act gives the officer in charge the power to grant such applications. I am not aware that the above customary claims or rights have hitherto seriously diminished the general utility of these canals, but I can see that they are likely to interfere with a policy of vigorous improvement and extension. A great deal can be done under the Canal Act; I do not think any additional powers can be properly demanded.

Mr. Roe.—The minor distributaries or water-courses from the main canal, which are called in this district kassis, are all private property, made by the persons taking the water. As these cannot be made without the permission of the canal officer, the grant of this permission would be considered by the people as conferring a prescriptive right to water, which would have to be compensated either by the grant of equal facilities of irrigation in another form without extra expense, or by a money payment representing the original cost of the "kassi," and a remission of the canal revenue. No inconvenience has been experienced from these rights, nor is there any necessity to limit them or buy them out. The Canal Act appears to confer on Government ample powers for dealing with any difficulty that might arise on this subject.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—In Bundelkhand I have seen water from an ancient reservoir deliberately run to waste by the inhabitants of a village with prescriptive rights to irrigation, because, if allowed to pass down the irrigation channel to villages lower down, claims to a share in the water would be established by use. The work was, I am bound to add, not under the charge of the Irrigation Department, and the tahsildar who was supposed to look after it had most probably never seen it; but still the jealousy with which villagers having prescriptive rights to irrigate from a tank or canal regard any attempt to extend to others the advantages which they enjoy, has always led me to advocate most strongly the buying-out of such rights on any work under Government management. I can easily imagine claims or rights to use water on the upper part of a river interfering most seriously with the progress of a Government work lower down when the volume of the river dwindled down during drought to a mere fraction of its volume during seasons of good rainfall, as it would be very liable to do on rivers dependent on sources fed by rain alone.

Mr. C. C. Anderson.—(1) None known; (2) none; (3) none; (4) the Canal Act gives full powers to buy rights in the use of water; (5) not known; (6) Canal Act VIII. of 1873; (7) the Canal Act provides for this; (8) the ordinary courts are quite capable of deciding such disputes.

BENGAL.

Colonel Haig.—No claims of prescriptive right to the use of water in canals or water-courses have yet come up in Bengal, excepting in the case of the Midnapore canal, which is fed from the Cossye river, a portion of the dry-weather supply of which had previously been used for irrigation at a point lower down river than the canal head. In this case an amicable arrangement was made with the zemindars, who had undoubtedly a good claim.

BOMBAY.

Mr. Hughes.—(1.) The only instance that occurs to me is the Khari irrigation sluices in Guzerat. The prescriptive rights of the "Kalambundi villages" on this work are of long standing, and are jealously guarded. An account of them will be found in paras. 59 to 73 of the annual Revenue Report attached. (2.) No interference with these rights is, I think, desirable. The lands of the villages in question have a right to sufficient water, or, when the discharge of the river is insufficient, they are entitled to the whole supply; (3,) but there is nothing to prevent surplus water over and above the requirements of the Kalambundi villages being appropriated as Government think fit.

Colonel Anderson.—Does not apply in my experience.

Mr. Erskine.—The only instance which I am aware of in the Northern division in which prescriptive

CH. IV. QN. 25.

BOMBAY.

rights in the use of water have grown up, is in the case of certain alienated lands irrigated from the Khári river, which has from time to time been improved by Government. What occurred in the case of these lands was thus described by a committee appointed in 1874 to make inquiries concerning the Khári river, situate in the Kaira Collectorate :—

"In 1868, *i.e.*, after the summary settlement under Act VII. (Bombay) of 1863 was carried out, and sanads issued according to its provisions, Mr. Rogers, then Revenue Commissioner, N.D., in his No. 2670, of June 21st, 1867, ordered that an extra cess should be levied from all holders of alienated lands which had benefited by the improvements in the river Khári. The cess was calculated by the Survey Department, and submitted to the collector of Kaira for imposition.

"30. Suits were immediately filed by many alienees against the collector for the purpose of putting a stop to the new cess. The legal remembrancer was consulted, and that officer at once advised Government to allow judgment to go by default. This was done, and, in addition, Government ordered all collections on account of the new water-rate to be returned to the alienees.

"31. Such being the case, we are of opinion that without legislation it will be impossible for Government to levy any extra excess from holders of alienated lands who have previously used the water of the Khári, even in the event of Háthmati water being supplied annually.

"32. As regards those alienees who have hitherto not enjoyed water rights on the Khári, we are of opinion that, if an extra supply enabled them to irrigate from the stream, Government could not levy an extra rate unless the alienees asked for the water; and if the extra supply ran through alienated lands *en route* to Government numbers, the only method of preventing alienees using the water would be to buy up a sufficient space of ground on both sides to remove the stream from the actual possession of the alienees, unless payment were made for its use.

"33. We are further of opinion that legislation, having for its object the taxation of summary settlement sanad holders who may benefit by improvements in the Khári water supply, will be beset with difficulties, inasmuch as it will be almost impossible to define their original right."

I do not think it would be worth while to buy out these rights. A very large sum would have to be paid, which, in my opinion, might be more profitably expended in other ways.

In many of the rivers and streams in the Nasik and Khandesh districts the water is fully utilised for irrigation, dams having been constructed; prescriptive rights to the use of the water exist in such cases, but Government has always exercised the right of deciding whether a new dam may be constructed or not; of late years, however, but little has been done in the way of constructing small dams. As I have already observed, when disputes concerning the use of the water from these dams arise, they are in the first instance decided by the revenue authorities, and their decision is generally accepted; if not, those discontented can sue in the civil courts. No change of system seems required.

Mr. Propert.—If by claims or prescriptive rights over water is meant a right on the part of any private individual to take water free, I may say that I am not aware of any such right or claim in the case of Khandesh, except as regards small inam holdings given for service or otherwise. In such cases, it will be occasionally found that, as the land is situated within the "thal" or area originally set apart for irrigation, the owner has a right to the free use of water; but claims of this kind are few and insignificant, and I consider no action regarding them to be necessary. Village communities have, of course, well-established rights to the use of water flowing from the particular bandhara or weir belonging to such village, but payment is levied for the use of the water. Village rights were determined years ago, and it would (for instance) now be next to impossible to raise or lower the old-established weir without giving rise to a crop of civil suits. This "right" to all the water drawn off from a certain weir rather tends to confuse arrangements when, as at the case at Mukti near Dhulia, a large tank has been constructed in order to supplement the general water supply of the river Panjra below the site of the tank itself (such water supply having for some years past been gradually decreasing). The water from the tank flows over all the weirs to be met with between the tank itself and the mouth of the river, consequently it is difficult to increase the irrigated area of any one village without giving all other canals *en route* the benefit of the increased supply. Such rights as I have mentioned cannot of course be bought out; in fact, there is nothing to buy, as the receivers of the water pay all that is demanded of them. The only question is how should the increased supply of water from the Mukti tank be paid for by the occupiers of irrigated land under the various weirs or bandharas into and over which the tank water actually flows.

As regards the Mukti tank, it has, I believe, been decided that, as so much extra water is now available the additional water supply ought to represent a money value, but as yet no steps have been taken to fix the manner in which the increased value should be actually realised. The matter is under consideration; but its solution is far from easy, inasmuch as, as I have before stated, the entire contents of the new tank find their way, *not into new canals*, but into and over weirs which have been in existence for hundreds of years past.

Mr. Ramsay.—Barring canals under the Public Works Department, of which there are but three in this district, the use of water is regulated entirely by ancient custom, which has existed from a period long anterior to British rule. Only tradition exists as to their origin. Very few disputes arise in this respect. Where such have occurred, it has often been owing to ill-judged interference on the part of Government officials. Disputes as to the right to and use of water are brought in the Revenue Court of the mamledar, who can restore or confirm possession pending an application to the Civil Court; but such applications are rare in my experience, and it is remarkable how well the people manage their own affairs when left alone. I should be sorry to see any interference with the existing system; over-legislation and petty interference with the concerns of the people are rapidly undermining our position in India.

On the rivers on which irrigation works now exist it would not be practicable to construct new weirs or anicuts, as that would materially affect rights already existing; but in fact the field is already fully occupied, and all we can do is to improve the water supply at its source by storage tanks. This might admit of fresh land being irrigated without trespassing on existing rights.

MADRAS.

MADRAS.

Mr. Sullivan.—(*a*), (*b*), (*c*), and (*d*). Such claims and prescriptive rights, if they exist at all in this Presidency, do so to such an inappreciable extent as not to merit consideration. It has happened in the case of a large irrigation project traversing a zemindari or other private estate that the works have intercepted the supply of water from other sources formerly enjoyed by the proprietor. Such matters are equitably adjusted either by the grant of money compensation or by giving free of charge from the new project

water, sufficient to irrigate the area affected. There is, however, another subject closely allied to that alluded to in the question which deserves notice. It happens that the sources of some of the large rivers and their affluents from which the Government works of irrigation on the plains derive their supply are situate in hills covered with forests which lie within the limits of private estates; and of late years, owing to the development of the coffee-planting industry, these forests, which were previously abandoned to the tiger and the bear, are now eagerly sought after as suitable sites for planting purposes. In some places, where competition is at all keen, large prices are obtained by the owners for such lands, and the consequence is that the denudation of these hill sides is already beginning to affect the water-supply, and unless measures are taken to check it serious results are likely to follow. That the agriculturists below, who have had the use of the water for a lengthened period, have a cause of action against those by whom a diminution of the supply is caused, cannot be doubted; but the difficulty would be to fix the responsibility on any one, and to determine in a court of law how far the damage was due to the felling, and how far to natural causes. The sole means, therefore, of averting a danger which is daily becoming more imminent seems to be a strict conservancy of all such forests, and the only way in which such a measure could be carried out would be by the State acquiring the right over them which now vests in private individuals.

(*e.*) Only, it is believed, in cases where the claim in the former was superior to that in the latter.

(*f.*) The position of the Madras Irrigation Company's Canal in Kurnool and Cuddapah is a case in point. As previously stated, when the project was initiated a stipulation was made that the company should close their head sluices on the Tungabhadra (an affluent of the Kistna) on the 31st December, so that the supply to the existing Kistna delta works should not be injuriously affected. This was simply deference to a prior claim to the water and the condition could not be equitably set aside, although it seriously impairs the efficiency of the company's works. The remedy in this case is the construction of large reservoirs for the storage of water when the rivers are in flood to supplement the supply when they run low, and this, it is believed, formed part of the company's original scheme, but was abandoned for want of funds.

(*g*) and (*h*) By a commission in which the interest of all parties should be adequately represented. Except where a private company or zemindar intervene, the interests of the State, as involved in the remunerative nature or otherwise of the project, would be best upheld by engineers specially conversant with the subject of irrigation, whilst the interests of the agricultural community, which, to a wide extent, are identical with those of Government, might be safely entrusted to Revenue officers (European and Native) of mature experience. Any decision which the Commission might arrive at would, of course, be subject to the revision and approval of Government. The concluding portion of the question offers a wide field for remark, but it will suffice here to observe that in disposing of such matters the object to be kept prominently in view is the general good. Vested interests and priority of claims should have all the weight given to them to which they are justly entitled, but when these are found to conflict with the general welfare they must be made to give way, care, of course, being taken that due compensation is awarded.

Lieut.-Colonel Mullins.—Customary claims and prescriptive rights to water. — The circumstance that the bulk of the water used for irrigation in Southern India is devoted to the cultivation of paddy probably makes the circumstances different to those contemplated by this question. Lands assessed as wet have a well-founded and first claim to water as long as it is available, and Government could not equitably divert water from such lands to irrigate other lands not so classed or not heretofore connected with that source of supply. It would be different with lands assessed as dry, for such have no claim to be supplied with water. Practically, none of the Government large works are so situated as to command alternative fields of irrigation. The assertion of a right to utilise water in tracts of country differing year by year would be inconsistent with any such arrangement as that which is the subject of question 24.

Mr. Longley.—Yes. The following are the customary claims or prescriptive rights which have grown up in the Salem district.

(1*st.*) The ryots owning lands in a particular village or a particular portion of a village are entitled to water through a particular sluice in a channel or tank. Thus, if a tank has two sluices, one of which is on a high and the other on a low level, each having a fixed extent to irrigate, the lands irrigated from the former (high level) are not entitled to water from the latter (low level).

(2*nd.*) Lands which are entitled to *surplus* water only are not entitled to direct irrigation through sluices and from tanks or channels. Lands are cultivated by surplus water only, *i.e.*, water discharged over the waste weir of a tank; and if water ceases to run over the waste weir, the crops on the lands, if raised, must suffer, though there is water enough in the tank; *e.g.*, the drainage water of fields irrigated from Raja channels of the Cauvery falls into a channel called Komarapoliem channel, which does not take its rise direct from the Cauvery, but which has a fixed area of its own to irrigate. The lands under the latter have no claim on water from the other two channels, even should the supply in the same (latter) become scanty.

(3*rd.*) Some of the river-channels feeding large tanks or reservoirs have certain arears alloted to them for *direct* irrigation. Such lands continue to be irrigated without interruption to the supply to the tank, so that the owners of these lands cannot obstruct the flow in the channel, even should the water run so short as to be insufficient for themselves. On the other hand, the owners of lands under the tank cannot object to the use of water by owners of lands under the channel under such circumstances.

(4*th.*) Where a tank or channel has lands in more than one village to irrigate, the supply to each is regulated according to the quantity required for each village, and water for the irrigating sluice of this is allowed to flow for so many hours. Again, the water allotted for each village is in turn distributed among individual holdings according to their requirements, which are also decided by the number of hours water is allowed to run through a regulating sluice to their holdings.

(5*th.*) Certain natural drainages are destined to feed certain particular tanks; *e.g.*, in the village of Velamputty, in the Mahendramangalam Mitta, there is a drainage water-course which empties its water into the Government tank of Dandukaranahalli. The zemindar cultivated one of his lands with the water of this drainage channel by diverting the same within his own limits, but a water-rate was levied on the land on the ground that he had no right to the water.

(6*th.*) In the case of Mahendramangalam zemindari, referred to in the answer to question 28, the zemindar was entitled to water for eight fields only, the assessment for which was included in the assets of his peishcush. Government claimed water-rate on all cultivation in excess of the said eight fields. These claims are chiefly founded on prescription as recognised by custom. They originate with necessity, convenience, capability of works, user, wainer, and the like, which time constitutes into custom and prescription.

No inconvenience has arisen from such claims or rights.

In case of disputes the law courts will inquire as to whether such claims were previously recognised

Ch IV. Qn. 25.

Madras.

and respected; village punchayats, under Regulation XII. of 1816, may also act.

Mr. Wilson.—I cannot conceive cases arising in which the action of the ordinary courts would be impossible or inapplicable.

No such claims or rights ever came to my knowledge.

Mr. Wilkinson.—The right to the water in a tank or channel resides in those persons who pay Government a higher rate of assessment for supplying or rather storing the water. A holder of dry land in the vicinity is not allowed to take the water, unless it is clear that the supply will more than suffice to meet the demand of the holders of wet lands. If he is allowed water, he is charged for it; and if he takes it without leave, he is charged a penal assessment, viz., twice or thrice the amount he would have paid had he obtained permission. I do not think that the Revenue authorities require any other powers than those they now possess to settle disputes as to water; any disputes which they are unable to settle should go before the courts.

Ch. IV. Qn. 26.

Question 26.—Maintenance of Certain Works by Cultivators.

If anywhere it be found that the tanks, &c. are so small and numerous that Government cannot practically carry out their supervision and maintenance, would it be expedient that steps should be taken for imposing on the cultivators or proprietors who benefit by the water the duty of carrying out all necessary repairs, or works for securing the irrigation in an efficient condition? Do you think this principle should apply to all tanks, great and small alike? Might the obligation, equitably, be held to attach without any corresponding relief being given, or should any privileges (such as lowered rent) be conceded to the ryots, if they are charged with the duty of repair? To what extent should the liability go; whether only to minor works not requiring engineering skill, or to all works? How could such a duty be best enforced, and any neglect of repairs checked at its inception? And what penalties should be legalised to punish such neglect when it does occur? Is there any local or other fund from which to pay for such work, if it consisted of more than ordinary earth-work? Could such a fund, in case of need, be established?

Punjab.

PUNJAB.

Mr. O'Brien.—The minor distributaries are so small and numerous that no Government supervision is made over them. They require to be cleared every year. The work is postponed to the very last moment by the irrigators, and the water entering the canals often prevents its being completed before the running season. Applications for remissions and reductions of land revenue on account of the failure of canal water are very common in this district, and in investigating such applications I have often found that the failure of water occurred only because the applicant had omitted to clear his small distributary; and when assessing villages, I have often wished for the power to set the crowd which was clamouring for reduction at work to clear their neglected water-courses. I think that steps should be taken to compel the irrigators to maintain in proper efficiency the small water-courses. As long as the present system of compulsory labour and fines on absentees is maintained in this district, all that is required to be done is to extend that system to the minor distributaries. The absentee fines fund exists, but it could not with justice be spent on private water-courses.

North-Western Provinces.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—I think that the proper repair of all tanks which do not require engineering skill for their maintenance should be imposed on cultivators or proprietors who benefit by the water, and where, as is, I believe, the case in Mysore, chains of tanks are dependent upon each other for safety, so that the bursting of one or more embankments from neglect would endanger a number of others lower down, the appointment of a Government inspector with powers sufficient to enforce due maintenance would, I think, meet all the requirements of the case.

Board of Revenue.—Question 26 is scarcely applicable to these provinces, where there is hardly any tank (artificial reservoirs) irrigation, the irrigation being from wells (jhils), natural ponds, and Government canals. At least, the Board know of no part of the North-Western provinces in which the tanks are so small and numerous that Government cannot practically carry out their supervision and maintenance. The Bundelkhand artificial lakes, if they should be classed among tanks, are neither small nor numerous, and it would be a farce to call on the cultivators who irrigate from them, or the zemindars in whose estates they are situated, to keep them in repair. This work must be entrusted to a professional engineer. The Board are of opinion that even where the zemindars and cultivators have a prescriptive right to irrigate from these lakes, and the land has been assessed by the settlement officer at irrigated rates, the Government are entitled, in equity, to charge water-rate, on the ground that the water supply is only maintained through the repairs, &c. made at their cost. But the Board consider that neither the landholders nor the cultivators should be burdened with responsibility which they cannot reasonably be expected to discharge, and neglect of which will render them liable to penalties prescribed by the law.

BENGAL.

Colonel Haig.—I have little or no experience of tank irrigation. I do not believe in the possibility of keeping tanks in proper repair by entrusting them to the charge of the cultivators and villagers who use the water. At least, I do not believe that proper maintenance could be enforced on this system without such extensive and detailed supervision by Government officers as would cost just as much as if the works were kept up by the Public Works Department.

BOMBAY.

Mr. Hughes. — I would invite attention to the description given in para. 103 of the accompanying Revenue Report for 1876–77 of the system existing in Khandesh and Nasik for the repair of small irrigation works. The Patfalla Fund therein alluded to was instituted with a view to relieving this department of the maintenance and petty repairs of the numerous small works of irrigation. For years the fund was collected and large balances accumulated, and very little expenditure was incurred. Ultimately this Department had to resume the work and to execute all necessary repairs from money furnished by the Patfalla Fund. The system as now administered answers admirably, and in the last annual Report on the Fund the Commissioner spoke in high terms of the efficient state to which the works have been brought.

I would urge that the system should be applied to the tanks in Guzerat and Dharwar. In the Dharwar Collectorate there are in all 3,023 tanks of various sizes, irrigating a total area of 1,05,776 acres. Petty repairs to these works have hitherto always been executed by the people, but where a work falls into serious disrepair Government step in and do what is required, a contribution being generally made towards the cost by the people. Complaints are sometimes made that the works are seriously deteriorating; and although, taking the tanks as a whole, there are facts that disprove this, the present arrangement cannot be considered satisfactory, and it would doubtless be better if some recognised system for the proper maintenance of the works were introduced.

As in Khandesh, I would nominate a patkari or chowkeydar to the charge of each tank, whose duty it would be to generally superintend the distribution of the water according to existing custom, and to at once bring to notice any damage that might occur to the works. The patkari or chowkeydar should be remunerated, if possible, by the people themselves, as in Khandesh.

These tanks require very little annual repair if constantly attended to, and any petty repairs to the earthen embankment I would leave to the patkari to effect with the assistance of the people. In addition I would levy a small annual fee on the irrigated produce, as in Khandesh, and I would allow the collections on each tank to accumulate to be expended by the executive engineer for irrigation in the thorough repair of the tank say once in every five or seven years or whenever it might be necessary.

These repairs should be carried out on regularly prepared estimates; and if the cost were more than the patfalla balance, the difference, not exceeding half the whole cost, should be made good by Government.

Colonel Anderson.—This is very much the case in the Dharwar Collectorate, which is the only collectorate in the south of Bombay Presidency possessing any considerable number of tanks. But it is only of comparatively late years that any great amount of tank repairing has been taken up by Government. It was common there for Government to undertake the repair of no tank unless the people provided about half the expense, without any claim to relaxation of liability to water-rate; many tanks were repaired and improved on these terms. Many of the tanks are so small that they only water a few acres, comprised often in the holdings of one or two holders of land. I am inclined to think that the best course as regards tanks in Dharwar is to leave them to existing arrangements, the Irrigation Department repairing them when large, or when a sufficient amount of present or prospective revenue is involved to make it worth while, and to leave the minor tanks to individual efforts. Between the very small tanks and the large ones which it is the undoubted duty of the Irrigation Department to repair, there is an intermediate class, say watering from 20 to 50 acres. I am inclined to think that the repair of these had better be left to private arrangement between the cultivators holding land below them and the authorities, and that if the cultivators will supply a part of the expense of repair Government should provide the remainder. The cultivators may hang back for a time, but, as the tank gradually deteriorates and the supply of water becomes insufficient, their own interests will ordinarily sooner or later induce them to provide a portion of the funds required. Finally, if the landholders would not provide any portion of the necessary funds for repairs and the tank became utterly inefficient, and consequently they found cultivation unremunerative, they might resign the land in question, which would then revert to Government, and the sale value of the land after the tank was repaired would in many cases fully recoup Government for the cost of repair.

No legislation for the repair of tanks can be carried out without an immense deal of Government interference, and it would be advisable to obviate the necessity for this as far as possible, since any Government interference against the general will of the people will certainly be resented by them, and prove difficult to work without extreme unpopularity.

The only kind of legislation which it appears to me might prove advisable would be that necessary to coerce a recusant minority of the cultivators under any tank, the majority being willing to contribute to repairs and to enter into terms possibly for the future payment of increased water-rate in consideration of improvements in water supply to be made, while a minority refused to join in any such agreement. In Bombay much land is inam, partially or wholly exempt from payment of land revenue. Inamdars are often lazy people, content with what they can draw from their land and averse to any expenditure on improvements. That the objections of a few of this class of people should stay improvements which the remaining holders of land desire, and are willing to pay for, is a real hardship on these latter.

Mr. Propert.—In the case of *small* tanks, the consumers of water should certainly be encouraged to undertake the duty of carrying out all ordinary repairs and conservancy, making application to the irrigation officers only in cases of real difficulty. As regards large tanks, the above arrangements should, I think, apply to the minor distributions only.

I do not think the obligation could equitably be held to attach without corresponding relief, and the best form of relief would be a comparatively low rate of water assessment. In no case could cultivators be expected to carry out any but the most simple repairs and silt clearances. If the villagers neglect to bear their part, the repairs should be executed by Government and the cost levied from the ryots; but to make such procedure legal legislation would be necessary. I think, however, that even without the assistance of a law it will generally be found that, if Government

Ch IV. Qn. 26.

Bombay.

officers were firmly to refuse to carry out such repairs as ought in justice to be executed by the cultivators themselves, the latter would give way, and eventually carry out the order given rather than suffer injury to accrue to their irrigated crops. As yet I do not consider that the respective responsibilities of Government and the ryots with reference to the repairs and improvements to canal works have been determined with anything like sufficient clearness. In many villages of Khandesh the occupiers of irrigated land pay of their own free will a cess called patfalla in addition to water-rates, and the proceeds of this fund are expended by the canal officers on repairs and improvements of an emergent nature. The levy of the cess has not been legalised, consequently we cannot enforce payment in the case of those who refuse to subscribe. It might perhaps be well to make the "patfalla" a legal demand, but I fear that if this be done we shall eventually find the fund debited with expenditure on works the cost of which ought in reality to be borne by Government itself.

Madras.

MADRAS.

Mr Sullivan.—Irrigated land is liable to an enhanced charge for the use of the water supplied by Government. This takes the form either of a water-rate imposed in addition to the land-cess, or of a consolidated wet assessment in which the two items are combined. In either case the ryot pays more than he otherwise would in consideration of the benefit he derives from the water being brought to his land, and a corresponding liability on the part of the State to maintain the supply efficiently has always been admitted. In any case, therefore, where it may be deemed expedient to transfer the cost of up-keep to the ryot, it is clear that the measure must be accompanied by a reduction of the rate previously charged equal in amount to the estimated annual charges for that purpose. Except in minor works it is more than doubtful whether the arrangement would be found to answer practically, as the ryots interested would always find a difficulty in apportioning the cost of repairs amongst themselves, and rather than pay more than their share they would allow the work to deteriorate. This could only be prevented by constant supervision on the part of the Public Works Department, the necessity for which it is the object of the proposal to obviate. This has been shown to be the case wherever the experiment has been tried; and it would, therefore, be unwise to attempt to apply the principle to works of importance, or to those requiring engineering skill. What seems to be a better plan is suggested below.

The importance of irrigation in a tropical climate, and the fact that nearly all irrigation works are in the hands of Government, impose on the State the duty of maintaining them in the highest state of efficiencd, in view to the general prosperity of the country any the security of the public revenues. That the means adopted to this end, under existing arrangements, fail to attain their object will be testified to by every engineer and collector in the service. A lump sum is assigned to "Repairs—Irrigation," the amount having been calculated, not according to the requirements of the works, but according to what could be conveniently spared from other projects. As provincial grants fluctuate with the state of the Imperial exchequer, it comes to pass that the efficiency or deterioration of these life-giving works is dependent more or less on Imperial contingencies, and the agriculturists of Southern India realise the effects of a frontier war by the breaching of their tanks and channels. This is surely an unthrifty policy which, if persevered in, must result in a serious diminution of the public resources. It has been accepted as a general principle that no irrigation project should be undertaken or maintained the income of which is insufficient to meet the charges of interest on capital outlay and of up-keep. But where a work is remunerative to this extent, it follows that only that portion of the income which is in excess of the charges of maintenance is claimable as an asset of the general revenues. This, and nothing more, represents the interest on the capital expended. But as a matter of fact the whole return is swept into the Imperial treasury, and once there it becomes a matter of considerable difficulty to get it out again. As long as the construction and up-keep of lines of communication were dependent on grants from Imperial funds, it was hardly possible to drive 50 miles on end in any direction; and irrigation works, under existing arrangements, suffer much in the same way. The plan that suggests itself as a remedy is not the imposition of an *additional* local cess for the up-keep of irrigation works, which is an Imperial liability, but an appropriation of a portion of the income of such works within certain local limits to be expended on their maintenance and on nothing else. An estimate should be made by the Department of Public Works of the cost of maintaining each project in an efficient state of repair; and that amount, deducted from the enhanced revenue derived from the land permanently improved by the application of irrigation, should be set aside for te purpose. The aggregate of these sums within defined territorial limits—say a taluk—should form the local repair fund for all irrigation works within them, and should be at the disposal of the collector and engineer of the district. The Imperial grant for provincial expenditure would, of course, be *pro tanto* diminished. It is possible, though not probable, that the whole amount might not be expended in the course of the year; but the balance should be carried forward so as to be available for accidents of a serious nature, to which the best constructed works are liable at times. This commends itself as a more practical arrangement than the proposal to reduce the rates now payable by the ryots on condition of their keeping the works in repair, whilst at the same time no enhanced expenditure will be involved.

Lieut.-Colonel Mullins.—Tanks are of two classes: Those the maintenance of which is of great importance to the well-being of the population, because the villagers are dependent upon them for a continued supply of water in their wells or for similar reasons, and is also of importance to the State on account of the revenue dependent on them.

Those of which the continued up-keep is important neither to the people nor the Government.

So far as the available evidence goes, it is tolerably clear that all the tanks of the former class must be under some sort of Government supervision. If such control be withdrawn, they will not be maintained: this is the universal teaching derived from tanks left to the villagers themselves to manage and maintain.

The tanks have, in the systematised method of dealing with them introduced during the past few years, been divided into the following classes:—

(1.) Tanks supplied by rivers and streams;
(2.) Rain-fed tanks in groups;
(3.) Do. isolated.

Under each description or class there are tanks of many sizes. Whatever arrangements be made it will be necessary, in dealing with tanks other than those which are so small and so circumstanced that their condition would not affect materially the security of other and more important irrigation works, to determine what are the essential requirements of those which it may be considered desirable to transfer from the charge of the Irrigation Department. Tanks irrigating less than 50 acres, and which are supplied from a catchment basin of not more than one to one and a-half square miles, might generally without much

risk be left to be managed by the villagers without any professional assistance, and without, therefore, the leading features of the arrangements, such as height of bund, length of surplus works, description of sluices, &c., being fixed definitely.

For larger tanks it would generally be needful to prescribe such particulars and to provide for their being promptly attended to under such specific arrangements as might be thought equitable and suitable. Thereafter all tanks so transferred to the charge of the villagers interested would be put in order and maintained by them.

Formerly, it was the custom for villagers to execute from time to time, under the name of kudimaramut, all petty repairs required to village tanks as well as to other village irrigation works. As regards tanks the custom has fallen into disuse, and proposals for its revival and re-establishment on a complete and satisfactory basis have been several times made, but so far progress has not advanced beyond the stage of discussion. The custom requires to be enforced in connection with all irrigation works except the great systems of irrigation which are specially maintained in complete order under departmental arrangements, and interference of any kind with which, on the part of the villagers, within the limits up to which water regulation is in the hands of the canal officers, would not be advisable.

The first and most important step towards reforming the arrangements under which tanks and petty irrigation works are maintained is, therefore, the re-establishment of kudimaramut. It may safely be assumed that, if this cannot be effectually done, it would be useless to discuss what measures could be taken for transferring to villagers the further duty of maintaining generally the irrigation works in which they, as village communities, are primarily interested. This first step taken, however, and got into working order, there would be no difficulty in taking the further step of placing in their hands the responsibility of looking after all works which it may be considered desirable to transfer to their charge, for kudimaramut will not be systematically carried out without inspection, and the staff employed to enforce it would be equally capable of seeing that in all respects the works were kept up in conformity with the general or particular rules laid down for their proper maintenance.

Unless a very radical change were made in the administrative arrangements customary in this Presidency, the supervision of the management of all irrigation works transferred to the charge of the villagers must, it is considered, rest with the Revenue Department. Legislation would be necessary to give power to enforce the obligation; the work would have to be done under the orders of the village officers, who are subordinate to the Revenue officers; and whatever arrangements were made for reimbursing the villagers for the cost of the duty imposed upon them, the settlement would naturally and conveniently be made with them at the time of the annual jummabundy.

Reimbursement or relief should in some form be made or given to the villagers for all work beyond kudimaramut which they may be required to perform. The State is responsible for the water-supply of lands on which a wet-assessment is levied, and consequently for the up-keep of the works by means of which such water supply is made available. For works in good order a remission of 8 per cent., which is the average assignment for the repair of irrigation works under the present system, might be allowed on its being ascertained that the tanks, &c. were maintained in complete order. For works needing repairs beyond those which might fairly be classed as kudimaramut, grants of from one to five years' revenue might be assigned, according to the present state of the works, to give the villagers a fair start in taking up their new obligations.

The success or failure of the arrangements thus sketched out would depend upon the degree of judgment and extent of supervision exercised by the superior Revenue officers. The inspecting agency must necessarily be of a very subordinate description, for otherwise there would be no gain in any direction to compensate for a loss of knowledge. The inspecting agency would possess considerable power, and unless fully supervised and controlled the remissions of revenue given would not reach those for whom they were intended without material curtailment, while the penalties which the Act empowering the arrangements would necessarily contain would enable inspectors to enforce their demands by threatening summonses. Under the Public Works system a given and definite quantity of work done has to be shown to allow of money being disbursed, and the work is capable of complete check. Under the suggested system there would be nothing but the state of the irrigation work to refer to, and it would be essential to provide for the examination by responsible officers yearly of a fair proportion of all the works in each inspector's range.

It would not be desirable to transfer to the charge of villagers—

(1.) Any large tanks the safety and good order of which may be essential to the security of the irrigation works supplying villages lower down;

(2.) Tanks or other works on which the irrigation of many villages depends.

There is at present no local or other fund from which work not included in kudimaramut could be carried out. An irrigation cess has been suggested by some Revenue officers, but such a cess would not be equitable in the case of villages which have been resettled for a definite term, and cesses are necessarily unpopular. The only case in which a cess is reasonable and equitable is when Government undertake to do work which it has heretofore been admittedly the duty of the villagers to do, but which for any sufficient cause, such as the general interests, it is desirable that they should cease to do. In districts which are about to be resettled it is easy and altogether better to include in the assessment the full demand, and this can, of course, be divided into any number of component parts, with one or more of which Government could deal as might be considered expedient. The people want to know what they have to pay for the occupation of certain land, and they prefer holding at a charge of 5 rupees an acre to being told that they are to pay 4½ rupees, and then having an additional half rupee demanded.

Mr. Price.—I have become, as a Revenue officer, acquainted with four districts, and I have been over every part of two of them. They are Salem, Cuddapah, North Arcot, and Chingleput, and in them petty tanks in the most ruinous condition abound. Government practically leave these irrigation works unrepaired. They have not enough, and, as far as I can see, will never have enough, to allow of their putting them into order. The most obvious way of dealing with this, which is a real difficulty, is to hand them over to the ryots at a slight reduction upon the usual assessment, and to collect this from them, water or no water, leaving them to repair their tank or not as they please. Another way of dealing with the matter would be to cut the bunds of the tanks in several places so as to prevent their holding water and then to give up the land which had been under the tank, and that in its bed, on dry rates, charging these, as is customary, without regard to the season. But to these plans there are the following objections:—

(*a.*) That practically there is not the slightest chance, except under a law which would render it compulsory, of ensuring that the ryots would, if the tanks referred to were handed over to them, keep them in order. A very large number of these small works form links in chains along which are scattered tanks worth keeping.

(*b.*) If all consideration of the up-keep of these small tanks is lost sight of, there will always be the danger of their breaching and carrying away the tanks lower down which have been retained by Government. It is a well-known fact that the breaching of even one

small tank in a series has led to the destruction of a large number of others in the chain.

From a revenue and irrigational point of view, I would rather not make over the small works to the ryots. It is all very well to make laws and rules on the subject and to direct them to be carefully observed; they will, in practice, not be, and there is not a sufficient staff of officers to enforce obedience.

To the second of the proposals made, the objection to be put forward is an economic one. It is that the small tanks are very often the means of supplying water for cattle and the villagers and for keeping up, during the dry season, the supply of that element in the surrounding wells. It is, therefore, on this ground objectionable to cut the bunds. Otherwise, this would be a satisfactory way of getting rid of the difficulty. The plan would not, in my opinion, involve any loss; indeed, I think that profit would be the result, for the assessment of the land within the tank would quite make up, if not exceed, the difference between wet and dry rates (which former would have to be given up on those fields under it) and remissions would never be allowed. The tanks selected for retention would have a better supply, and the money which is now yearly frittered away, generally as a precautionary measure, in tinkering up the small tanks, would go to the improvement of the larger works. At present no one is contented. Everyone grumbles: the ryot because he gets an insufficient supply of water, and has to pay wet assessment; the engineers because these tanks are always a source of anxiety and trouble to them; and the Revenue officers because the ryots are always crying out for repairs, and because the Public Works Department officers are always patching and producing no apparent increase of revenue.

It will be seen from what I have written above what my views are. The idea of making the ryots, by means of pains and penalties, keep petty tanks in order, is utopian. Theoretically it is possible; practically it is, in my opinion, utterly impossible, unless Government employ a much larger staff of officers than they now do. I would get rid of these small works, once and for all, by cutting the bunds so as to render them harmless and letting the people take the beds up for cultivation. Very many petty works could now be disposed of in this way without risk of harm of any kind occurring in consequence. I would, in the case of all works, no matter whether great or small, insist upon the execution by the ryots of all petty repairs. It is perfectly well known amongst the people themselves in what customary labour consists. It has been an institution of very long standing, and that it has fallen into desuetude has been the fault of the authorities themselves. It could now be easily revived and worked by the Public Works Department through the Revenue officers.

There is no local fund from which to pay for petty repairs, and I do not see how one could be established. I think that by far the simplest way of dealing with the question of repairs to tanks would be to yearly set aside for this purpose a certain proportion of the revenue of each work. I consider that this should come out of the present returns, as the settlement recently introduced decidedly implies, if it does not convey, the agreement that Government will, in consideration of the rates paid, keep the sources of irrigation in order. Adding a tank-repair tax would, of course, not be illegal, but it would hardly be just, and it certainly would be the source of much dissatisfaction.

Mr. Wilson.—Where Government cannot practically carry out the supervision and maintenance of tanks, it would be better to hand them over to the ryots whose lands are affected by them, leaving their up-keep to their self-interest.

At present, in many parts of the country the ryots will not stir hand or foot to stop even a rat-hole. They pay assessment for wet land, and expect Government, which charges for its irrigation, to maintain the work which supplies it.

In the case put in the question tanks are practically *not* maintained; they could not be worse if handed over to the ryots, but would really stand a better chance of being properly kept up than they have at present. This would necessarily involve a reduction of assessment. Government is at present responsible for the maintenance of the tanks; if it declines this responsibility, it must cease to look for the return that it expects for supplying lands with the means of irrigation; the land under a resigned tank is to Government nothing more than unirrigated land; the assessment of it should, therefore, be its proper assessment if classed as dry.

Where much engineering skill is required in a work, the probability is that it will be sufficiently supervised by the officers of Government; it is the great mass of small rain-fed tanks throughout the country that I would hand over to the ryots, and in handing them over I would impose upon them no obligation whatever for the up-keep of the works, the maintenance of which I would leave to their self-interest. It may be said that the tanks would soon be utterly ruined if handed over in this way, because the ryots would never take common action in the matter, and would be always fighting and quarrelling about it. What in this respect has been the result of handing over to the ryots the many *ruined* tanks throughout the country? The results of this policy cannot have been bad, or the policy would have been changed. If successful in cases where a considerable initial cost to make the tank hold water at all must be incurred, would it be unsuccessful where the initial cost would be little or nothing? Besides, the question supposed that the tanks if not ruined already are in a fair way to being so, since Government can neither maintain nor supervise them.

Mr. Crole.—This question has been raised before (1869), and has been considered and reported on by me as well as several other Revenue officers in Madras. I am quite clear that the project of handing over the care of any of the tanks to the ryots would result in loss to the State and country alike. Interests in villages are, as a general rule, too divided; the art and power of combination has, under our Government, been weakened; the very knowledge of simple hydraulic engineering, for which the Madras ryot was at one time famous, has nearly died out for want of exercise; under our rule the admirable Madras village system has decayed, and economic and administrative conditions have undergone great changes. These and similar causes make it impossible for the present to hope for any success for a proposal which might have worked fairly if introduced 50 years ago. There is a prescriptive duty imposed on every ryot holding land under an irrigation work of contributing the labour required for its protection and slight repair. This used to be called *kudimaramut*, or customary labour. The custom is most unfortunately for the country fast dying out. Its decay dates from the present constitution of the Public Works Department, which, by relieving the Revenue authorities from direct responsibility for and interest in, the repair and up-keep of works, has entailed a vast amount of unnecessary expenditure on the State. If the collector had an engineering assistant, something in the same way as he has a police assistant, there can be little doubt that the present unsatisfactory condition, of the smaller irrigation works especially, would soon cease. It is a suicidal policy to break up the administration of a district into weak and peevish departmental fragments, owning allegiance to as many departmental heads. Kudimamut might still be revived under the plan suggested, and the interests of Government and the ryot, being in the hands of a strong central authority in each district, would be properly conserved instead of being endangered in the interests of so-called departmental independence. Cases proving this are constantly cropping up. A flagrant instance regarding a breached tank, 20 miles from the head-quarters of this district, at this moment condemns this existing system. Touching the question of funds, my strong opinion is

that the tanks are the most paying works we have. As in the case of all structures, a part of the gross revenue derived from them is properly and strictly debitable to maintenance. It is not, and cannot all be considered pure income. That the duty of maintenance rests on Government, and not on the ryot, is proved by the admission of Government made a hundred times, that when it supplies no water, the ryot is to pay no land revenue. The observance of a plain business-like rule, to reserve each year a percentage of the irrigation revenue to meet charges for accident and wear and tear, would place these works in a sound condition. At present the whole revenue is swept into the coffers of the Imperial Government, and plain duties are overlooked. I am in favour of giving the collector the absolute disposal of the allotment of a certain portion at least of the percentage of the irrigation revenue alluded to. This percentage should not be less than 15 per cent., of which the collector should have 10 per cent. for the maintenance of his irrigation works, the remainder being left at the disposal of Government for special allotment. We all recognise the necessity for spending money to maintain roads in efficiency. It is strange that the far more urgent duty of setting aside a maintenance grant for irrigation works seems still to require demonstration.

Major Montgomerie.—There is no local or other fund from which to pay for work required to be done to tanks, &c. which is more than that ordinarily furnished by kudimaramut, nor does it seem advisable to form such a fund. Once the irrigation works are placed in proper order they can be maintained in that order in the easiest manner by enforcing kudimaramut or customary labour.

Ch. IV. Qn. 26

Madras.

All petty tanks the maintenance and repair of which is not profitable should be given up, but they must not be maintained as reservoirs except under some sort of Government supervision.

All tanks or systems of tanks which are worth maintaining must be under Government supervision, and the enforcement of their repair by kudimarimut or by whatever system is decided upon can only be done by the Revenue Department or by giving the executive engineer magisterial powers which would virtually make him and his subordinates assistants to the collector. The engineer would thus secure the full assistance and influence of the Revenue Department in the execution of the work, and he would have much more leisure for the performance of his own professional functions.

By this arrangement one executive engineer would probably be sufficient for each collectorate except in the Godavari, Kistna, Tanjore, and other districts, where the important irrigation works are situated, and which must always necessarily be as much as possible under the direct control of the professional department. The establishment thus set free would form the nucleus of the staff of the Chief Engineer for Irrigation referred to in answer to Question 2.

To further strengthen the hands of the engineer, and to place him in closer relations with the collector, no remissions on account of excess or deficiency of water, &c. should be granted without having been referred first to the Public Works Department for report.

Question 27.—Obligation of Zemindars to maintain Tanks.

Ch IV. Qn. 27

How far do obligations rest on zemindars or other superior landholders to maintain tanks or other irrigation works? Are such obligations properly recognised where they exist, or is any additional power called for to enforce them? Where they do not now exist, are there circumstances or localities in which it would be expedient to impose them on some such basis as that referred to in question No. 26, and if so, on what general system should it be done?

NORTH-WESTERN PROVINCES.

North-Western Provinces

Colonel Brownlow.—Where the supply of water is less than the demand, distribution by rotation is universally resorted to in India, so far as my knowledge goes, water-course heads being alternately closed for fixed periods of time. This system has marked advantages over the distribution of a diminished volume by proportionate diminution of volume in each water-course. By keeping the water together, instead of frittering it away in small driblets, the proportion of loss by absorption is much diminished, and the irrigation is done more quickly. Half of a cubic foot per second flowing in a water-course will in the same time irrigate much more than four times the area that could be watered by a feeble stream of one-eighth of a cubic foot, and 40 or 50 cubic feet per second can be forced much further down a distributary by closing all water-course heads in alternate lengths of the channel for certain days of the week or month than by reducing the discharge of all water-course heads and allowing them to run constantly.

In Upper India it is the duty of the local canal department to see that the available supply of water is fairly distributed on an existing canal, and I am most strongly of opinion that it should remain charged with that duty.

As regards the most advantageous distribution of supplies available for any future canals, the local government charged with the design and execution of any particular work would consult its revenue department, and follow its recommendations within the limits imposed by physical, agricultural, and economical conditions. In explanation of which limits, I append a copy of some remarks written by myself in this connection on another occasion:—

"To the argument that canal irrigation ought to be restricted to first-class soils and cultivation, in order that Government may obtain the highest possible returns for its expenditure, I reply that, even supposing a sufficiency of first-class soils and cultivation to use up all the water available, both physical and agricultural considerations forbid our leading the water about in search of the best land and the highest market. Canal channels must follow the ridges of the country, and the water must be distributed within a reasonable distance from the source of supply, or great waste from absorption will ensue, while the best land and highest cultivation may lie a long way from the head of the canal, or from the ridge occupied by a canal channel. Confining canal irrigation to first-class land would interfere most injuriously with rotation of crops and tend on the whole to impoverish the soil; for the cultivator would be prevented by the high water-rates from taking his best crops and cultivation round his farm. On this subject I cannot do better than quote Mr. Alan Cadell: 'To charge high 'rates, with the special object of restricting cane and 'cotton to a very small area of highly manured land, 'would be to attempt to change the system of agri-

CH. IV. QN. 27.

NORTH-WESTERN PROVINCES.

'culture in the Upper Doab. A man might, perhaps, 'grow finer crops if he restricted the manure at his 'disposal to say one quarter of his land; but the 'average would be less good than at present, when 'the jât of the Upper Doab takes his sugarcane 'round the whole of his irrigated land, and manures 'the whole of that land once in every three, four, or 'five years, instead of half of it only in two.'"

MADRAS.

MADRAS.

Mr. Sullivan.—The obligations of zemindars in this respect are of course limited to the works on their own estates, and as there is no law to enforce their performance they are often neglected. For the sake of their tenants and for the protection of interests beyond the boundaries of their estates which might be injuriously affected by the breaching of tanks and channels, it seems desirable that the performance of this most important duty of a landlord should be made compulsory by law. The arrangement suggested in the preceding question would not be applicable in this case, as the State is under no obligation to maintain the irrigation works in a zemindari.

Lieut.-Colonel Mullins.—As far as can be ascertained, zemindars are under no direct obligation to Government to maintain works of irrigation. As a rule, the villagers are expected to maintain them, and it is only occasionally that special assistance is afforded them, *e.g.*, when a flood has occasioned damage evidently beyond the means of the villagers to repair. It does not seem to be usual for zemindars to assign any fixed proportion of the revenue to the up-keep of irrigation works. There are no data for comparing the present state of the works with their condition at any former period That condition is not what it should be, but the same may be said of a large proportion of the irrigation works of Government villages.

Major Montgomerie.—The zemindars can hardly be said to be bound by any obligations to maintain tanks and other irrigation works in a really efficient state.

In the first place, their negligence cannot be checked until after the event, and in the next place after a disaster has occurred it is not difficult to make out that the cause was beyond human control or at all events what could reasonably be required of the proprietor.

Lieut.-Col. J. N. Hunter.—It would be very desirable that the duties of the dasbundumdars should be defined, and whether Government have not a right to say to any dasbundumdar who holds land free on condition that he keeps the Government tank in repair, "Our contract is now at an end; we resume our tank, "and will repair it ourselves; you will be charged "rent for your land, and have no further duties in "connection with the tank repairs."

Major Vibart.—I believe zemindars are obliged by their shasanoms to maintain their tanks in an efficient state, but I do not think they at all properly recognise their duties in this respect. I think their duties should be enforced by passing a law that when Government were compelled to interfere the zemindars should pay double the cost of the repairs which their neglect had necessitated.

Mr. Wilkinson.—I know of no obligations which zemindars, mutadars, or inamdars are under to maintain their tanks and irrigation works in order, and the consequence is that they seldom are kept in order. I think it is highly desirable to impose on all superior landholders not holding under a sanad-i-milkiat istimrar or permanent sanad the obligation of keeping all their irrigation works in proper repair; but I cannot suggest on what general system such obligation should be enforced.

Mr. Turner.—No obligations, other than being sued in the civil courts for damage done, rest, so far as I know, on zemindars or other superior landholders to maintain tanks or other irrigation works, and I have now before me (Ramnad zemindari) an instance in which the zemindars have neglected the repairs of their tanks for years until the whole country is well nigh ruined. Such a state of things must, it appears to me, be remedied. The wretched state to which the misrule of the zemindars has reduced Ramnad is something appalling. While the rest of the country has been progressing Ramnad has positively retrograded. To quote from Mr. Boyle's Report on the estate, dated 18th September 1873. "Not only is the country in "the condition in which men depict India 50 years "ago in the utter absence of made roads, but this "event has been intensified tenfold by the utter "neglect of all irrigation works, tanks, and channels "for years." At the present minute there is not a single made road in the zemindari along which traffic can pass during the wet months with safety, the revenue system is an anachronism and must be remodelled, and the revenue servants are still little better than a swarm of devouring locusts. Fortunately, we have a long minority of 10 years before us, and we can do a great deal in that time, but there ought to be some means of rendering the former state of anarchy impossible for the future. I would suggest that a clause might be entered in the "Form of permanent sanad," rendering it obligatory on the part of the zemindar to maintain his tanks or other irrigation works in good repair. He should also be held responsible that his administration be so ordered as to favor the progress of the estate and well-being of the ryots.

Mr. Foster.—No obligations rest on zemindars or other superior landholders to maintain tanks or other irrigation works. I must certainly think they ought to be required to keep them in repair. The land forming the bed of the tanks was excluded from consideration when the permanent settlement was fixed; but now the rule is that this land is the absolute property of the zemindar to do as he likes with; he can build on it, or he can cultivate it without interference from us.

I suppose now in the case of tanks which zemindars have put to other purposes, they must be left as they are; but in the case of those that were excluded from the permanent settlement zemindars should be compelled to keep in order all tanks which are not irretrievably ruined; but in consideration of this being a somewhat new duty imposed upon them, I think Government might give them some assistance in money for the first repairs, even though all the direct benefit accruing from the repairs goes to the zemindars.

I would allow no tank that is not now irreparably ruined to be allowed to fall out of repair, unless an engineer officer should certify that its place had been properly taken by some other means of irrigation. If the zemindars fail to carry out the necessary repairs to the tanks, I see no objection to Government carrying them out at the zemindar's expense. If it were thought that this would be in contravention of the agreement between Government and the zemindars at the permanent settlement, Government could acquire the half-ruined tanks by the Land Acquisition Act, repair them, and charge for water anyone who wants to take it. Water is absolutely necessary for the country, and it is impossible that anyone can be allowed to exercise any private right even, with regard to it, to the injury of the community, so long as he does not suffer much injury himself.

QUESTION 28.—MADRAS ACT NO. VII. OF 1865 (WATER CESS).

What are the rules made under Madras Act No. VII. of 1865? Give a statement of the works to which this Act has been applied, and what is the revenue realised by means of it? Give an illustration of the cases in which exemptions are granted under section 4 of the Act. What is the nature of the receipts entered in the Miscellaneous Land Revenue under the head "Cess for repair of tanks?"

MADRAS.

Mr. Sullivan.—(*a*) and (*b*).—These will be found printed in Appendix C. They are applicable to all the districts in the Presidency with the exception of those noted in the heading of the rules and to all lands not permanently classed as wet. In the excepted districts, however, the same system obtains with modified rates, and the amount of water-rate realised in them is, therefore, included in the following statement. It must be borne in mind that this merely exhibits the additional revenue due to irrigation derived from lands on which the land assessment is a charge distinct from the water-rate, and is exclusive of the revenue derived from irrigated lands charged with a consolidated wet assessment:—

STATEMENT of Irrigation Revenue derived from Lands not bearing a consolidated Wet Assessment.

Districts.	Water Rate	Second Crop Assessment.	Total.
	Rs.	Rs.	Rs.
Ganjam	26	—	26
Vizagapatam	2,377	—	2,377
Godavari	10,20,878	4,222	10,25,100
Kistna	6,98,672	373	6,99,045
Nellore	17,529	10,646	28,175
Cuddapah	23,715	42,682	66,397
Bellary	39,217	76,053	1,15,270
Kurnool	27,497	29,663	57,160
Madras	—	—	—
Chingleput	43,818	51,755	95,573
North Arcot	64,541	35,410	99,951
South Arcot	2,48,922	69,077	3,17,999
Tanjore	1,44,963	86,407	2,31,370
Trichinopoly	38,344	92,667	1,31,011
Madura	3,782	31,931	35,713
Tinnevelly	3,622	27,921	31,543
Coimbatore	16,646	302	16,948
Nilgiri	—	—	—
Salem	5,279	—	5,279
South Canara	—	—	—
Malabar	—	—	—
Total	23,99,828	5,59,109	29,58,937

(*c*.) The exemptions are confined to permanently settled estates where lands previous to the construction of the works were classed as wet and charged accordingly when the peishcush was fixed, and to inam lands where irrigated land formed the original grant. Such lands coming under the influence of a work subsequently constructed are allowed the use of water free of charge.

(*d*.) The contribution of this cess is almost entirely confined to one district. The total amount collected in 1875–76 was only Rupees 3,700, of which nearly Rupees 3,000 was contributed by the district of Chingleput. This is evidently a relic of former days when Public Works Department's budgets and estimates were unknown and the revenue of the State was paid in kind under the "warum" or sharing system. At the time of the harvest the out-turn of each holding in the village was stored in certain convenient localities, and no one dared to remove it until the officers of Government came round. Then, according to a system varying in different parts of the country, but well understood by the village communities, commenced the distribution of the shares. Part of the gross produce was set aside to recoup the ryot for the expenses of cultivation, part for the remuneration of the village servants, part for the pagoda and religious services, and amongst other items a portion was allotted for the repairs of tanks and channels. In some places this was added to the sirkar share when the final division of the net produce took place, the State nominally undertaking the repairs, in others it was handed over to the heads of villages for the purpose, but as a matter of fact the irrigation works of the country benefited but little whichever system prevailed. The collector of Coimbatore reporting on the latter stated as follows:—"This system appears to have been most fallacious "and unprofitable, as on the assumption of the pro-"vince by Government the tanks and channels were "found in the utmost state of disrepair and the culti-"vation proportionately deteriorated." The cost of maintaining irrigation works in an efficient state of repair having, ever since the commencement of British rule, been accepted as a charge on Imperial revenues, there can be no question but that this cess should be done away with in the few districts where it now survives.

APPENDIX C.

RULES for the levy of Water-rate in addition to Land-assessment on all lands not permanently classed as wet in all districts (except Ganjam, Tanjore, Madura, Tinnevelly, Malabar, South Canara, and the Nilgiri Hills) when water is supplied from a Government source of irrigation.

I. All dry lands temporarily cultivated with wet crops shall in lieu of any system now in force pay a fixed water-rate on the following scale of standard rates. Where water is raised by mechanical contrivances the rates shall be reduced one-fourth, and in deltaic tracts when water is drawn from drainage channels one-half.

Standard Rates.	First-Class Tanks, River and Spring Channels.	Second-Class Tanks, River and Spring Channels.
	Rs. A. P.	Rs. A. P.
a. Water-rate for a single wet crop raised on dry lands, per acre.	4 0 0	3 0 0
b. Second crop on the same land, per acre.	2 0 0	1 8 0
c. For sugar cane, betel, cocoa-nuts, plantains, &c., requiring water longer than an ordinary wet crop, per acre.	6 0 0	4 8 0
d. For dry crop watered, whether first or second crop, per acre.	2 0 0	1 8 0

1. This rule does not apply to North Arcot or South Arcot, which have special rates uniform throughout the district, nor to the delta tracts of the Godavari and Kistna district.

2. Rate *b* does not apply to Cuddapah.

3. In Kurnool, rate *d* to be reduced one-half.

II. When a portion (or portions) of a field is irrigated, and the field is not more than half an acre in extent, the charge shall be calculated on the actual extent of the field.

When the field is larger than half an acre, the extent irrigated must be carefully measured and the

Ch IV. Qn. 28.

MADRAS.

charge shall be made by the half-acre, subject to the limitation that more than the recorded extent of the field shall not be charged for.

For instance, if 1·5 acres are irrigated, the charge shall be the rate for three half-acres; if the extent irrigated is 1·55 acres, the charge shall be the rate for four half-acres, provided that, if the whole field be less than four half-acres, as for instance 1·75 acres, the charge shall be the rate for the recorded extent of the field.

III. The collector has power to impose prohibitory rates whenever water is taken without permission.

IV. The above rules are applicable to all Government sources of irrigation the supply in which is at all regular and to be depended on. Simple jungle streams which only receive a casual supply may be utilised, as hitherto, without charge.

V. No Government water is to be taken under these rules without the express sanction of the head of the village or of the Department of Public Works officer, when the works are in charge of that department.

N.B.—These rules do not apply to second crop raised on *wet* land, for which the usual charge (generally half the single crop assessment) will be made.

Ch. IV. Qn. 29.

QUESTION 29.—DISTRIBUTION OF WATER WHERE SUPPLY IS DEFICIENT.

How has the distribution of water been fixed where the supply is less than the demand? Do customary or other established rights interfere with the extension of irrigation from any Government canal, and if so, where and to what extent, and what remedy should be applied? Is it the duty of any one to see that the available water is made use of to the best possible advantage for the community as a whole, and on whom does the duty fall? Is there any difference in the system of supplying canal water to lands under ryotwari settlement and under zemindari settlement, where the two exist, and what is it?

PUNJAB.

PUNJAB.

Captain Ottley.—The answer to this question involves the consideration of two perfectly distinct cases which may arise in practice. There is first the case in which the volume of water in the projected canal is known to be insufficient for the requirements of the whole tract of country through which it will pass. Under these circumstances the first action is to eliminate all portions of the country (if there be any such) which do not actually stand in need of canal irrigation. The conditions may be stated to be, (1) a rainfall of more than 20 inches, and (2) a spring level less than 25 feet below the natural surface of the ground. Where these conditions exist, it is considered that the crops can be assured by well irrigation, and that there is no necessity for supplying these areas with canal water.

The Kasur and Sobraon branches of the Bari Doab Canal may be instanced as a case in point. The proposed supply was insufficient for the whole tract of country through which these branches were to run, and orders were therefore issued that irrigation was not to be provided for the upper portions, where the average rainfall was more than 20 inches per annum, and the depth of water in the wells was less than 25 feet.

On the Western Jumna Canal also it is proposed to restrict the supply to all the "khadir," or river lands, where the depth to water is very small (in some cases not more than 6 to 10 feet), and to carry the canal water past these tracts to the drier regions further down, where the wells are 50 and 100 feet deep, and where also the rainfall is very small.

These tracts having thus been eliminated and the distributaries lined out, the limit of irrigation is fixed at about 2 miles on either side of these channels, because it has been found that water-courses carried further than this are more difficult of supervision, and lead to waste of water. This limit of 2 miles is fixed by section 31 of Act VIII. of 1873, and Rule 6 of the Rules under that Act, where it is enacted that water shall not ordinarily be granted to lands where the length of the water-course from its head to the point of contact with the fields exceeds two miles.

Lastly, as regards villages within this limit, the rule is to grant only sufficient water to enable the people to irrigate a certain proportion of the village lands. This proportion is, of course, a variable one, depending on many considerations; but it is now usually fixed at from 20 to 25 per cent. of the culturable area.

The second case, referred to above as one that might and does not occur in practice, is that of a short supply in the canal during an irrigating season, that is, when the volume of water available for distribution is insufficient to meet all the requirements of those to whom outlets have been allotted. In this case, divisional canal officers are empowered, under section 32 (*a*) of the Act, and Rules 15 and 16, to impose closures (locally known as "tátil" or "bandi") on such water-courses as they may deem right.

The Act allows these closures to extend to 10 days, but, as a matter of fact, the practice is rarely, if ever, to extend them beyond four days at the outside. The orders for these closures are notified either (*a*) by a notification or (*b*) by a special order, and must be in writing under the hand of the executive engineer, a copy being conveyed by the Canal Establishment to each village concerned, and delivered to the patwári (village accountant, or, in his absence, to any lambardár (headman of the village). The receipt of each person who receives such an order is taken and filed in the Canal Office; and it is by law the duty of the patwári and lambardár who receives the notice to affix it at once in a conspicuous position in the village, and to make its purport generally known.

There is probably no other portion of a canal officer's work which demands such experience and care as the proper regulation of these closures, whilst their due enforcement, especially in seasons of drought, can only be ensured by the exercise of great vigilance and firmness.

On this subject, the late General Greathead wrote some years ago as follows:—

"It is a universal rule of experience that a high standard of irrigation from a given amount of water is never attained without direct superintendence of an European officer. It is only by unremitting energy in riding about the country and seeing with his own eyes that the periods for taking water allotted to different water-courses are not overpassed, that the officer in charge of irrigation can ensure the fertilisation of distant lands; and no one can do this duty so well as a young Englishman."

By means of these closures the supply of water is reduced as far as possible rateably, so that the available supply may be distributed to the best advantage of the community at large.

NORTH-WESTERN PROVINCES.

Mr. C. C. Anderson.—(1.) Rateably. (2.) No. Broadly speaking, irrigators have no right to the waters of the canals. There is a clause in Act VIII. of 1873 which debars the acquiring of right to irrigation under the present system. (3.) The canal officers of all grades. (4.) None known.

BOMBAY.

Mr. Hughes.—When the supply is less than the demand, water is distributed by "wara" or turn, that is, on the horary principle. It is the duty of the canal officer and canal subordinate to see that the available water is made use of to the best advantage for the community as a whole. The canal rules give the canal officer powers which, though not legalised, are generally exercised for preventing waste, &c.

Colonel Anderson.—In all old works the people manage the distribution of water themselves. As a general rule, every cultivator holds more land than he irrigates, and there is nothing to prevent his extending his irrigated area as far as the supply of water will admit. Each person has certain defined rights as to the time during which he may enjoy the flow of water from the tank channel; and self-interest will induce him to make the most of it, as far as his means will admit. For it must always be remembered, that water is not the sole need for irrigated cultivation, which requires much more labour and more manure than unirrigated, and one, or both, may not be procurable, or only to a partial extent.

Mr. Ramsay.—As stated above, the water supply is regulated by ancient custom, and very few disputes arise on the whole. Government canals, within my experience, have only been started where no other such works previously existed; or else the action of Government has taken the form of repairs to existing works or of storage tanks to improve the existing supply. In either case, the actual distribution of water has remained, as before, with the people themselves. In most villages where there are canals there is a hereditary officer termed a "patkuri," who regulates the supply of water. He is supervised by the patel and those who have an interest in the water. The system works far better than that of our Government canals under paid subordinates of the Public Works Department.

The amount of land that can fairly be irrigated by the existing supply of water has been calculated by the Revenue Survey Department. The whole of this area has been subjected to water-rate assessment, and Government need look no further. Each man looks after his own rights, and, as stated above, very few disputes arise on the whole. There is no occasion for any change of system. No man can take water to which he is not entitled, as the other villagers would not permit it. Government gets the full value of the irrigated land in the shape of enhanced revenue.

MADRAS.

Lieut.-Colonel Mullins.—Ordinarily the area to be irrigated is at least roughly limited to the supply of water supposed to be available, and this area is, in the case of old tank and channel irrigation, termed the ayacut. When the supply is less than the ayacut requires, the distribution is either regulated by local custom, or, where none such exists, the more influential landholders appropriate the water, and the less influential leave their lands waste.

No distinction is made between lands under ryotwari and zemindari settlement in supplying water from canals. Canal officers are guided solely by areas in apportioning the supply.

QUESTION 30.—MANAGEMENT OF IRRIGATION BY PRIVATE AGENCY.

Is there any special difficulty introduced into the spread of irrigation by the intervention of the agency of a company in the management of a canal, and how could such difficulties be best overcome?

BENGAL.

Colonel Haig.—No company will in future undertake to make a canal unless profits are certain. If so, Government, which requires all the profits it can get, ought to carry out the work, and not a private company. My impression is that the intervention of a company in Orissa caused the greatest difficulties, which could never have been satisfactorily met.

MADRAS.

Lieut.-Colonel Mullins.—Only one company, the Madras Irrigation and Canal Company, has been in existence in Southern India. Its intervention has been attended with numerous difficulties, which are due to many causes, among which conflicting interests, an assumed necessity for protecting the ryot or user of the water at the expense of liberty of action on the part of the Company, complex rules which are almost unavoidable when two independent authorities have a voice in all the arrangements, are among the most prominent. It is questionable whether these difficulties could be overcome otherwise than by selling water

Ch. IV Qn. 30.

Madras.

by volume, and to introduce such an arrangement is not easy, first, because the ryots have no knowledge of quantities; secondly, the volume needed for different soils and for different crops is very variable, and its value under such circumstances would differ widely. There is no advantage in employing the agency of a company, and there are many and important disadvantages. If a company desired nothing but to make its canals beneficial to the population, it would not be a good instrument for the carrying out of irrigation projects, because its obligation cannot be made sufficiently definite to remove all occasion for difference of opinion as to whether they had been fully performed.

Ch. IV. Qn. 31.

Question 31.—Direct and Indirect Returns.

In reckoning the return obtained from the outlay on canals or other irrigation works, is full credit given them under the existing system of accounts? Where separate water-rates are charged on the cultivators, is the indirect profit obtained by the increase of land revenue properly taken into account? Where there has been no distinction made in the payment to Government between the charge made as land revenue and that for the supply of water, is the canal revenue fairly estimated at present, and if not, how do you think it would best be reckoned?

Punjab.

PUNJAB.

Captain Ottley.—Full credit is *not* by any means given to any of the canals in the Punjab. In no instance is the so-called indirect profit credited to the canals in the Imperial accounts, although the department is permitted to show these amounts in statistical returns as part of the benefits derived from the operation of the canals.

This applies not only to cases in which these amounts are assessed by the civil officers, but also to all the sums which are actually assessed by canal officers themselves. Thus the whole of the "water-advantage rate" on the Bári Doáb Canal (which is assessed by the canal officer and amounted in 1877-78 to Rs. 2,00,083) is credited in the Imperial accounts as land revenue. Again the whole of what is called the "fluctuating land revenue" in the Montgomery district, and which was assessed by the canal officer in 1877-78 at Rs. 85,894, is shown in the Imperial accounts as land revenue and is not credited to the canals.

Similarly on the Western Jumna Canal the whole of the owner's rate, although it will be assessed by the canal officers, will, unless a change is made in the system of accounts, be shown as land revenue in the Imperial accounts.

It may be as well to add that even the correct share of the revenue which, as has been mentioned above, is permitted to be shown in statistical returns, has not all along been given to the canals, but endeavours have been and are still being made to rectify the omissions. Much has already been admitted, but there are still some items under consideration and under process of adjustment by the Financial Commissioner.

The contention, however, is that all these sums (by whatever name they may now be called, whether "water-advantage rate," "owner's rate," "enhanced land revenue," or "fluctuating land revenue") which are at present only shown in canal statistical returns, and which are really credited in the Imperial accounts as land revenue, should properly be credited in these accounts as canal revenue, in the same way that the actual water-rates or "occupiers' rates" are credited.

But even supposing this to be done, the result will not even then correctly show the true credit which should be afforded to the canals.

Thus in most of the districts of the Punjab proper there are large areas of culturable waste land, the property of Government, which now bring in nothing in the way of revenue, except the small amount which can be realised from a grazing tax on cattle fed in them; there are also other tracts on which, owing to the small rain-fall and the great depth of the wells, only a very light assessment can be made.

On the opening of a canal not only is a large portion of the waste land brought under irrigation, and assessed with land revenue at irrigated rates, but population increases, and a further portion of the waste is opened out for the cultivation of the poorer cereals and pulses dependent on the rain-fall, and all these tracts are assessed at the next settlement at unirrigated rates at a far higher figure than the old grazing tax; and whilst no portion of this would be credited under the present system to the canal, it is clear that but for its presence no such assessments would have been possible.

Both these cases have occurred on the Bari Doab Canal in the Lahore district. Large tracts on which only a few stunted trees grew before the canal was opened are now covered with crops, and besides this a very large area of land the cultivation of which was formerly precarious has now been secured, so that a large increase in the assessments of the district has been made possible by the introduction of the canal.

In the interval between the first and second settlements the population per square mile increased from 107 to 214, and, although this may not have been entirely due to the increased cultivation which was rendered possible by the canal, still there can be no reasonable doubt that it was greatly aided by it.

In such a case as the Bari Doab Canal, where improved communications both by rail and road, the benefits arising from the establishment of a strong government, the large expenditure on other great public works, and other causes have doubtless had great effect in increasing the general wealth and prosperity of the district, it would be very difficult, perhaps impossible, to determine with any degree of exactness the particular share which is due to the introduction of the canal.

There are, however, many other cases in which practically the whole of the increased prosperity would be attributable to the canal alone.

For instance, in such a case as that of the country between the rivers Ravi and Chenáb, for the irrigation of which a canal has been designed, the whole increase of revenue which might accrue to Government after the introduction of the canal would be as fairly a canal asset as the revenue derived from the mere water-rates, and this because nothing but the amount now levied could be raised without canal irrigation.

In the two districts through which this canal would pass (*viz.*, the Gujránwála and Jhang districts) there are about 2¼ million acres of unappropriated waste, the property of Government; and the rain-fall is so small, and the wells (where they exist) so deep,

that any extended cultivation without canal irrigation is out of the question.

In a case of this sort the only way of clearly establishing the true benefits of the canal would be to take the revenue assessed on the tract through which it was to pass previous to its construction, and to credit the canal with every rupee by which that revenue might subsequently be increased. Till this is done the true results of irrigation in such tracts will never be known.

NORTH-WESTERN PROVINCES.

Colonel Brownlow.—So far as I know, full credit is given under the existing system of accounts to canals and other irrigation works in the North-Western Provinces and the Punjab for both direct and indirect returns upon the capital outlay. I am not in a position to give an opinion on the sufficiency of credit allowed in Bengal. In Madras, while credit is often taken, in the vaguest manner, by enthusiastic engineers, when writing or speaking on the subject of canals, for land as well as water revenue dependent on the works, the tendency of the Madras Government in Revenue Department, when driven to show what has really been the result of the large irrigation works, is decidedly to under-estimate the water revenue.

In Bombay and Sind, so far as I know, full credit is given to all irrigation works for the results fairly due to them.

Mr. C. C. Anderson.—(1.) Yes. (2.) Yes; but the returns for the entire province are not quite complete. (3.) Such a condition does not hold in the North-Western Provinces.

BENGAL.

Colonel Haig.—In Bengal full credit is given for all *direct* canal returns, but not for the indirect, which it is very difficult to estimate.

BOMBAY.

Mr. Hughes.—My reply is "yes" to each of the questions under this number.

Colonel Anderson.—This is in the main an Irrigation Department question. As regards the latter part of the question, there can be no difficulty in Bombay in ascertaining the portion of the revenue due to water on irrigated land apart from that on the soil alone, since the means exist for at once ascertaining in reference to any field what the assessment of it would be if it was cultivated without irrigation as simple dry-crop land, exactly in the same manner as the assessment of any dry-crop field in the same village is ascertained, the same soil data being recorded for each.

The above is the last question of Chapter IV., but a few points occur to me which, though not specifically touched upon in any of the questions, are within their general scope and, therefore, on them I desire to offer a few remarks.

The indirect advantages of irrigation are more than once referred to without any specific mention of what they are.

It has often been remarked, and even long ago before the survey settlement, that a village in an essentially dry-crop country which happens to have a good proportion of irrigated land, whether from well or tank, has more backbone in it than a purely dry-crop village. This applies not only to Government villages but to inam villages. The people are generally better-to-do. This cannot be solely from the superior productiveness of the land, for an additional assessment is paid on irrigated land, which, before the survey settlement, in Government villages, though very unequally imposed, was very generally pitched at a very high rate, and in inam villages not under the survey settlement is always so. Much is, I believe, due to the greater certainty of return, and to the habit of pretty continuous labour, rendered necessary by the use of irrigation. The habits induced by the necessities of irrigation are more or less extended to all other lands, to the great benefit of the cultivators.

Another undoubted indirect advantage is the certainty of being able to procure fodder for cattle in even a season of almost utter failure of rain. No season, not even that of 1877, in Kaladgi (always a district of limited rainfall), is utterly without rain; but it comes when it is not wanted, and may do little or no good except so far as it may supply means of irrigation. The year 1877 happened to be the second of short rainfall, and, partly from that cause and partly from the nature of the fall which did occur, the ground at a very few feet below the surface was most unusually dry. A fall of several inches in a few hours will do little or nothing for the wells, while the same fall spread over days instead of hours will do much. A heavy fall spread over a short time does, however, greatly affect the supply of water stored in the sandy beds of rivers, and even when the wells proper are dry those well-like constructions (called boorkees) common in the Deccan on the banks of streams will be worked with success. Villages in Kaladgi last year with many boorkees obtained a sufficient supply of fodder to save all their really good cattle.

Beyond doubt, therefore, the practice of irrigation does increase the wealth of the people and tend to preserve that wealth from the evil effects of a bad year. The wealth of the people is the wealth of the Government, and, therefore, it is not advisable to calculate returns on too close figures when considering the propriety of sanctioning money for the extension of irrigation. Four per cent. is looked upon as the natural minimum return for money invested by the State. But as regards money expended on irrigation, Government should be, in certain districts especially liable to drought, content with a certain return of even 2½ per cent., and trust to the difference being made good indirectly; first, by the increased ability of the people to consume other tax-paying commodities; and secondly, by the extra security given to the ordinary land revenue by the general improvement in the condition of the people, and lastly, by the obviation to some extent of the possible necessity for Government incurring heavy expenditure in exceptionally bad years.

The next point to which I would advert is the kind of irrigation work which would probably be most successful in the Deccan, a country in which the population is not dense, neither are extensive areas suitable for irrigation to be found within a small circle, conditions which evidently point to spreading the possibility of irrigation over a large area and against concentrating it.

There are two forms of large works; 1st, dams across rivers with channels leading away from the river on one or both banks. These works have the advantage of absorbing but a small area of useful land, and of ordinarily being certain of a supply of water. The objection is that they are exceedingly costly, and, in order to diffuse the irrigation over an area sufficient to contain the labour and land to turn it to account, an immense length of channel must be constructed.

The second class of large works are storage tanks, which may be fed by a channel from a river or be fed by damming up a stream in an appropriately situated valley. The objections to these works are, first, that they are very costly; secondly, that they invariably cover a very large area, and that, in most cases of the best land in the country, land which would in any ordinarily bad year give some crop; thirdly, they are open to the same objection as channels from rivers in regard to the great expense of making their subsidiary channels of a length to sufficiently diffuse the irrigation power. No large work in the Deccan has up to the present time ever paid, and the annual accumulation and addition of interest to the original capital must be fast putting them into a worse financial position.

The kind of irrigation which is in every respect most liked by the people is that from wells and boorkees or well-like erections on the banks of streams. The latter are the most certain, as the beds of streams will hold water in years when the wells are dry. One "mote" or waterbag is reckoned as capable of irrigating five acres of ordinary crops, supposing the lift of water to be of ordinary height, say, not exceeding six or eight yards. At present the people can obtain fund for sinking wells from Government under the Land Improvement Act; that Act, however, is, I believe, but little operative, from reasons readily to be appreciated.

It appears to me that advances might be made for sinking wells by mutual agreement between the cultivator and the Government, the latter advancing the money and the former agreeing to pay a certain sum annually as a rent-charge on his land. My impression is that Rupees 12 a year would be readily paid on a well which would water from four to five acres. Such a well might in most situations be constructed for Rs. 200 to Rs. 300, on which Rs. 12 would give from 6 to 4 per cent. return. This sum might be secured on the land as a first charge, similarly to the Government revenue. The payment of return for expenditure on works of this nature would be immmediate, the benefits of irrigation would be diffused over as wide an extent of country as possible, and the greatest good would be done for the smallest expenditure. Five hundred wells would be got for 1 to 1½ lakhs of Rupees, which would irrigate 2,500 acres of land. In no way could the irrigation of such an area be secured at any approach to that expenditure from large artificial works.

The sole difficulty, and no small one, would be in the construction of these wells. The people could not be trusted with the money and the construction themselves. The work would require to be carried out under close supervision. As regards the comparative ease with which water is obtained from these and from large artificial works supplying water by flow, the ryot would prefer to have water under his own control, to use when he chose by lift, to having it supplied by natural flow at any rate of assessment at which he is likely to get such irrigation. If such wells could be constructed and a payment on the capital expended of 5 per cent. secured, 3 per cent. might be considered as interest and 2 per cent. as the sinking fund to pay off the original expenditure, which would afford a far more certain return for money directly and indirectly than is likely to be afforded by any large works whether tank or channel in the Deccan, and do far more immediate as also, probably, permanent good. The great advantage would also be obtained of avoiding the investment of large sums in one locality, any adequate early return on which must be a matter of doubt. A well or boorkee could be constructed in a very few months, and the next year should see the return for the capital expended coming in without difficulty or any administrative supervision of the area irrigated.

I am fully sensible of the difficulties in the way of properly supervising the construction of a great number of small works. Still, by dividing the tracts to be dealt with into small circles, this might probably be got over. If the works were well and solidly constructed in the first instance, large repairs need not be necessary during a long lapse of years. Small repairs should be executed by the landholder. I would provide him with the first work and leave him to keep it up without further aid from the State.

It may be said that the people would refuse to accept such works and to pay what would, in fact, be an additional assessment of Rs. 2 to 3 an acre. Irrigation would be supplied to them in the form they are most accustomed to; if they would not accept this, it appears to me hopeless to expect that they will accept irrigation from large and expensive works, which would, to make them in any way remunerative, require average rates to be paid of, probably, at least treble the above amount, accompanied with the great objection in the ryot's mind of not having the water under his own control.

As regards the comparative advantages of irrigation works and railways as preventatives of the effects of famine, the following appears to me to be the state of the case.

Production even in the worst districts is in ordinary years much in excess of the requirements of the existing population, and, with the improvements in cultivation which time and increased population will bring about, will meet the wants of a considerable addition to the present population without the aid of extensive irrigation. There is, therefore, no immediate need for adding to the produce of the country generally or of these bad districts specially.

Railways will enable surplus produce to be exported to a much greater extent than the present communications and means of carriage will allow; even the worst districts freely produce exportable articles, some wheat, oilseeds of several kinds, besides the commoner kinds of grain, which, with cart carriage, will not, from its bulk in proportion to value, pay the cost of any distant export. Oilseeds especially are in constant demand to an unlimited extent for export to Europe. An improvement in railway communication would, therefore, immensely increase the wealth of the people and enable them to resist hard times to an increased extent.

Railway communication would also supply an existing want, while irrigation would be a doubtful remedy, as it is very uncertain how far the people are in a position to avail themselves of it when offered, and therefore, how far the construction of large works would in most situations approach to repaying the State the heavy cost of construction. It would be hard to find any reasonably well-selected railway which would not pay 2½ per cent. net at an early date after construction. I think no large irrigation work in Western India has ever yet given such a return or holds out any prospect of doing so at any early date, notwithstanding that some of the few constructed are in exceptionally favourable situations.

When famine was actually on, irrigation would do comparatively little to obviate the pressure as regards human food; the extra quantity locally produced would affect prices little, though the supply of fodder would be of inestimable advantage towards saving cattle. On the other hand, with a railway within 40 or 50 miles of any place, and with a good sound road passable in all weather within 12 miles of every place, it would be absolutely impossible for the extreme pressure of famine to exert itself, as prices must be kept down.

There is no want of food in the country for a much larger population than it carries, and a general short supply is practically impossible, but the food is not at all times in the place where it is wanted; it would

appear to be the evident primary policy not to increase the quantity of food, but to increase the means of transfer from one part to another. If, in providing those extra means of transport, we not only obviate the worst effects of occasional famines, but also foster the general wealth of the country in ordinary years, we are adopting two certain modes of averting the worst effects of famine.

It may be said that many of these proposed inland minor railways would pay little beyond the cost of working. Even if this proved to be the case it would be no argument against them compared with irrigation works. In the first place it remains to be seen if very large irrigation works will pay more, and secondly these minor railways would act as feeders to the main trunk lines under Government guarantee, and a considerable proportion of what the minor railways carried, at perhaps little beyond the cost of conveyance, would be afterwards carried for a much longer distance over the trunk lines, to the great benefit of the Government treasury.

Ch IV Qn. 31.

Bombay.

The matter may be summed up as follows: We have already, somewhere or other, always more produce than we require for internal consumption, and more than we can find the means of exporting. Before taking measures to increase the quantity of that produce, primarily turn attention to adding to the means we have for conveying the surplus away to the place where it is wanted. Extension of irrigation may be, and doubtless is, of great local utility, and may be advantageously carried out with caution as to embarking large sums on single schemes. But under present circumstances, for the general benefit of the country in all times and in all seasons, the extension of irrigation cannot compare with the extension of railways.

MADRAS.

Madras.

Lieut.-Colonel Mullins.—The data for a proper answer to this question are not available. The results of irrigation have been completely worked out only for one system, the Kistna delta, and final orders in the Revenue Department have not been passed on these. It is improbable that full credit will or can be given in the accounts of the more successful works, for many items of acknowledged beneficial results are not capable of definite estimation, added to which the detailed examination of the Kistna delta irrigation has shown how many causes there are for differences of opinion as to what items are or are not such as should be credited to irrigation. The general conclusions will probably be approximately correct, and the decision come to will be the basis for the accounts of all the other large irrigation works.

LONDON. Printed by Eyre and Spottiswoode,
Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office